Academic Program Review:
AAS Medical Laboratory Technician

Table of Contents

Academic Program Review:
AAS Medical Laboratory Technician

Introduction

The Medical Laboratory Technician Program prepares students to work in all areas of the clinical laboratory (i.e., hematology, chemistry, blood bank, immunology, microbiology and urinalysis). Courses in each of the disciplines mentioned above are presented in both lecture and laboratory format. Additionally, students are assigned to several local laboratories to obtain clinical experience at scheduled times during the program. The general education requirements for the AAS degree in Medical Laboratory Technology include coursework designed to develop the basic and critical thinking skills necessary for effective communication and problem solving. Math and science courses provide the necessary foundation for understanding concepts covered in professional courses.

Upon successful completion of the program, students will be awarded an Associate of Applied Science degree, and become eligible to challenge a national certification examination. Students who pass a qualifying certification examination are eligible for Nevada state licensure as a Medical Laboratory Technician.

Academic Program Review:
AAS Medical Laboratory Technician

College, School, Program Mission Statements

CSN Mission Statement

The College of Southern Nevada creates opportunities and enriches lives with inclusive learning and working environments that support diversity and support student success. The College fosters economic development, civic engagement, and cultural and scientific literacy, while helping students achieve their educational, personal, and professional goals.

https://www.csn.edu/our-mission

ESHS Mission Statement

The mission of the Engelstad School of Health Sciences (ESHS) is to provide high quality, student-centered certificate and degree programs that meet the needs of state and local communities.

Medical Laboratory Technician Program

The mission of the Medical Laboratory Technician Program is to provide learning experiences that allow students to acquire theory, and develop laboratory techniques and critical thinking skills necessary to operate successfully in a clinical laboratory setting.

The Medical Laboratory Technician Program mission statement and outcomes have been developed based on industry and certification standards. The program mission supports the CSN mission as the program supports student success in their educational, personal, and professional goals of pursuing a career in the Medical Laboratory field. Additionally, student success, institutional effectiveness, and economic development are supported by graduation rates of 97% and placement rates of 100% for 2017-2018 as reported to the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).

Academic Program Review:
AAS Medical Laboratory Technician

Faculty

The Clinical Laboratory Science Programs employ one program director, three full-time faculty, one research associate, and one administrative assistant, which is shared with one other program.

Faculty perform ongoing evaluation of lecture and laboratory topics and activities. Course syllabi are reviewed and updated to complement current clinical practice. Faculty are required to obtain appropriate continuing medical education, and this is reflected in revisions to class materials.

The program employs part-time faculty, as needed, who have the appropriate educational background and clinical expertise. Minimum credentials for part-time faculty include a baccalaureate degree, and a national certification as a medical laboratory scientist/medical technologist, medical laboratory technician or phlebotomist, dependent on the course requirements. Part -time faculty are primarily hired to teach laboratory courses, as they are usually actively practicing individuals capable of conveying current technical practices to the students.

Practicing medical laboratory scientists/medical technologists, medical laboratory technicians, and phlebotomists serve as clinical affiliate site instructors for students during scheduled clinical rotations. Clinical instructors have appropriate credentials and/or Nevada state licensure for their respective positions.

Please see Appendix A for faculty profiles.

Academic Program Review:
AAS Medical Laboratory Technician

Program Selection

The Medical Laboratory Technician (MLT) Program is a Limited Entry Program, and accepts 12 students per year. Applications are submitted to the Office of Limited Entry Admissions, processed, and reviewed for consideration. Only the top-applicants are selected for entry. Selection is based on a point system, and selection criteria is available to students on the website. See Appendix B for application and selection criteria.

Students applying to the MLT program must have a minimum GPA of 2.0 or higher for program prerequisites which include Biology, Chemistry, English, and Math courses. Students must maintain a C or better (75% or higher) in all program courses in order to remain in the program.

The AAS-MLT degree is a 66-credit degree which includes general education and program specific courses, that complies with NSHE, College, and NAACLS accreditation guidelines.

Student Completion Information

Student completion information is provided annually to NAACLS, to the Dean of Health Sciences, and posted on the College of Southern Nevada-Medical Laboratory website. NAACLS requires reporting of a three-year rolling average. Data are noted below. Placement rates include employment in a related area and/or pursuing educational goals.

Academic Year	Graduation Rate	Placement Rate
2014-2015	83%	100%
2015-2016	87%	100%
2016-2017	97%	100%
2017-2018	97%	100%

Student Learning Outcomes

The student learning outcomes of the College of Southern Nevada Medical Laboratory Technician program are to ensure that graduates are competent in the areas of professional practice listed below:

1. Assess and correlate clinical and/or laboratory data through application of theory and principles.

2. Perform and/or interpret laboratory calculations.

3. Select appropriate courses of action in accordance with established laboratory procedures.

4. Evaluate laboratory data to recognize and report clinically relevant results according to established procedures.

Assessment

The Medical Laboratory Technician Program assessment plan is an ongoing system for periodically and systematically reviewing the effectiveness of the program. In a continuing effort to provide quality education in clinical laboratory science, the MLT Program incorporates feedback from several sources in performing program review and evaluation. Responses and comments received from these sources are considered in planning curriculum and learning activities for future MLT students.

Annual Assessment Reports

The College of Southern Nevada requires annual assessment of programs and program courses according to a multi-year plan. The current plan for the MLT program concentrates on review and/or revision of educational outcomes/learning competencies in selected courses. See appendix C for College Assessment Reports and the ESHS LEAP Assessment for the MLT Program.

Graduate Surveys

In order to continue to meet the needs of future students, the MLT Program solicits input from graduates by requesting that they complete a survey rating their knowledge and technical ability in each major clinical area. Students are asked to comment on Program and College resources, as well as the quality of instruction received at clinical affiliate sites. Students are also asked to submit specific demographic information regarding type of employment and future educational plans. The remaining survey questions pertain to the overall effectiveness of the program. Students are asked to comment on program strengths, weaknesses, instrumentation, specific improvements, faculty, and preparation for national certification. See appendix D for the most recent results.

Employer Surveys

In order to meet the future needs of the medical community, the CLS Programs (MLT and MLS) solicit input from potential employers by requesting that they complete a similar survey pertaining to student knowledge and technical ability in each of the major clinical areas. Employers are also asked to submit specific demographic information regarding the type of clinical facility, number of beds, employment of graduates, and importance of phlebotomy skills. Employers are also given an opportunity to make specific recommendations as to how the CLS Programs can better prepare graduates to function competently in the clinical setting. See appendix E for the most recent results.

Academic Program Review:
AAS Medical Laboratory Technician

Student Evaluation of Instruction

Upon completion of each course, students are given an opportunity to evaluate instruction by completing an on-line evaluation provided by the College. In addition to expressing their opinions on the course and didactic instructor, students are also asked to consider course organization, expectations and class discussion in their evaluation. Overall, students and graduates are satisfied with courses and instruction.

Students are also given an opportunity to evaluate clinical instructors and the overall practicum experience by completing a form contained in each practicum notebook.

Practicum Evaluations

Clinical instructors rate student performance of designated tasks on a scale of 1 to 5 (unacceptable to outstanding performance). There is a separate page in the practicum notebook for each task. Upon completion of a specific group of tasks, the student receives an overall performance evaluation, which includes an assessment of punctuality, attendance, accuracy, productivity, ability to learn, acceptance of criticism, communication and organization of time and resources.

Advisory Committee

The Advisory Committee is composed of the Program Director, program faculty, community members and representatives from the clinical affiliate sites. The Advisory Committee meets at least annually to evaluate curriculum changes and address program concerns.

Academic Program Review:
AAS Medical Laboratory Technician

Curriculum Information

Medical Laboratory Technician

Certification Pass Rates

Certification pass rate information is provided annually to NAACLS, to the Dean of Health Science, and posted on the Medical Laboratory website. NAACLS requires reporting of a three-year rolling average. Data are noted below:

Academic Year	ASCP Certification Pass Rate	AMT Certification Pass Rate
2014-2015	78%	100%
2015-2016	76%	100%
2016-2017	82%	100%
2017-2018	100%	N/A-graduates did not challenge this exam during the reporting period

Curricular Analysis

Student performance overall is above average, with graduation rates, certification pass rates, and graduate employment, or continued education, above the benchmarks set by the National Accrediting Agency for Clinical Laboratory Sciences. Certification pass rates have increased over the preceding four years. No curricular changes at this time. Faculty will continue to monitor.

Practicum Evaluation: After faculty discussion, the notation of 'Critical Parameters' has been added to practicum evaluations. Students must earn a MPL rating of 3 or better on critical parameters; overall task areas; and/or performance area/professionalism, as determined by the clinical site. Critical parameters include basic laboratory skills critical for safe patient care, both for the overall clinical laboratory and specific discipline, as well as the soft-skills of professionalism.

Action: Addition of "Critical Parameter" to practicum evaluations beginning Summer 2018.

Result: To date, all students have met critical parameters.

The Medical Laboratory Technician program has traditionally been run as a five-semester program. Problems involving Financial Aid due to the low number of credits per semester and student concerns of the amount of time for program completion have driven a change in the curriculum offering.

Action: Create a program track shortening the number of semester's in-program from five to three. This plan is due to take effect in Fall 2020, allowing students to finish the program in one-calendar year.

Result: Student success will be monitored with the compressed program. No data at this time.

Academic Program Review:
AAS Medical Laboratory Technician

Information, Technology, Space and Equipment Resources

Medical Laboratory Technician

Library Resources

Library resources include a number of Health Science related databases, publications and periodicals. Additional resources are available to the students in CLS classrooms.

Computer Access

Computer access and software programs are sufficient for program students.

Computers connected to the Internet are available in CLS student laboratories for student use. Wi-Fi is available for student use throughout the campus. An academic computing center is located in the "C" building on the Charleston Campus as well as in the CSN library. Computers with a variety of tutorial software and word processing programs are available for student use during weekday, weekend and evening hours. Students can utilize these computers to access and print instructional materials required by program faculty.

Facilities

Classroom/laboratory space for the program is sufficient.

Each classroom assigned for CLS didactic instruction contains adequate seating for students, a whiteboard, PC/DVD combination, overhead projector and retractable viewing screen with SMART Classroom Technology.

Classroom/laboratory spaces are connected to a laboratory preparation room. The prep room contains chemical storage cabinets, an autoclave, flask scrubber, computers, refrigerators, freezer, biological and chemical safety hoods, a reverse osmosis system, and a deionized water filtration system. There are two fire extinguishers, (2) eyewash stations, a safety shower, fire blanket, and a hazardous spill clean-up kit. This room is also equipped with a negative-pressure ventilation system. A copy/fax machine is also located in this area.

Each permanent faculty and staff member has an office equipped with a telephone, computer, locking desk and file cabinet, and bookshelves. Security personnel also have card keys to the office doors. Faculty and staff computers are connected to a network system for printing and Internet access. A password is required for computer access. Fax and copy machines are located in faculty office common work area.

One administrative assistant is assigned to support the Clinical Laboratory Sciences Programs. The administrative assistant's area is equipped with a telephone, locking desk, computer, printer, and fax and copy machines.

Quality of facilities maintenance is generally adequate, however, response and notification of environmental issues is sometimes slow or non-existent. Excessive heat in student laboratory spaces in late spring, summer, and early fall have caused incidences of students, and faculty, feeling ill and light-headed. Students are required to wear laboratory coats and gloves for laboratory exercises; doors to the laboratory spaces cannot be propped open due to security concerns; and the use of fans is prohibited as students are working with biohazardous substances. This has been an on-going concern for a number of years, with no acceptable solution. Additionally, excessive heat also causes the equipment in the student laboratories to malfunction.

Unreliable power to department refrigerators and freezers have cost the program/College thousands of dollars in replacement costs for reagents. A plan is in place for backup generators that will hopefully address this issue.

Instructional Equipment

Equipment in the laboratory science program has been a critical component to the success of our students in the clinical setting. Each major clinical laboratory discipline (i.e., Microbiology, Hematology, Urinalysis, Blood Bank, Clinical Chemistry) is equipped with automation similar to instrumentation used in the clinical/hospital laboratories. Accreditation site visitors were impressed with our student laboratory experience, stating it was one of the best in the nation.

New technological advances and instrument malfunction require the updating of equipment in some areas.

The automated analyzer in the Clinical Chemistry laboratory is 12 years old and running on Windows 2000 software. It has recently become inoperable for the majority of the photometric testing performed in the student laboratory. The manufacturer no longer supports this analyzer. The program has pursued approval for a new analyzer for the last two years. The program will again request Perkins funding to replace this analyzer.

The automated analyzer in the Hematology laboratory is no longer in working order. The program has spent over $5000 to repair the analyzer, and unfortunately, other internal workings have now failed. Without the ability to purchase extended maintenance agreements, repairs sometimes are cost prohibitive. The program will request Perkins funding to replace this analyzer.

Academic Program Review:
AAS Medical Laboratory Technician

External Factors

Medical Laboratory Technician

Enrollment Trends

The Medical Laboratory Technician (MLT) program is a Limited Entry program. Approximately 30-40 qualified applicants apply to the MLT program each year. Twelve students are selected each year. Applicants earn points toward selection based on a number of factors such as grade point average of designated program prerequisite courses, completion of higher-level chemistry courses, and completion of a phlebotomy course of study, among others.

Student to faculty ratio is 12 to 1 in lecture and student laboratory courses. The AAS-MLT program is the only program in the state among NSHE institutions.

Program Graduate Demand

As reported to the National Accrediting Agency for Clinical Laboratory Sciences, the three-year average placement rate, which includes graduate employment and/or pursuing additional education, is 100%.

Graduate Satisfaction

Overall, graduates are satisfied with the professional preparation of the MLT program. According to the MLT graduate survey results from 2014-2017, eight of eleven respondents ranked their professional preparation as good-excellent as related to discipline specific issues, and eight of nine respondents ranked their ability to perform technical procedures as good-excellent. Eight of eight respondents rated the quality of classroom instruction as excellent.

Graduates also identified areas of improvement for the program including additional funding for updated equipment and reagents, and to add a review course for board exam preparation.

Unique Elements

The Medical Laboratory Technician program is the only NAACLS accredited program in the State of Nevada. Small class sizes allow for one-on-one instruction, if needed, for students. Well-equipped student laboratories encourage student interaction with the equipment that is necessary for the function of medical laboratories.

Challenges facing the program are not unique to the College of Southern Nevada, however, are common for medical laboratory education. Medical laboratories are becoming increasingly corporatized, and therefore, services are consolidated to optimize finances. For the education sector, this equates to fewer clinical placement sites especially in Microbiology and Transfusion Medicine (Blood Bank). Due to the limitation of clinical placements, the number of students accepted into the program now is 12.

Funding for equipment, consumables, maintenance, and repair was decreased due to a decrease in State funding a number of years ago. While the funding levels have been steady since then, services and

reagents increase annually. As previously mentioned, program graduates also have concerns about program funding.

The MLT program graduates have a 100% placement rate. While most MLT graduates are continuing to the MLS program, graduates are filling positions in the community. According the U.S. Bureau of Labor statistics, job prospects for Medical Laboratory Technicians are best for persons who complete an accredited educational program and earn a professional certification. Nationally employment rates are expected to increase by 14%, and in the State of Nevada the projection is 21%.

External Validation

Accreditation

The Medical Laboratory Technician program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). NAACLS accredits a variety of programs in health-related fields and is recognized by the Council for Higher Education Accreditation (CAHEA). Recognition by CAHEA affirms that standards and processes of accrediting organizations are consistent with quality improvement, and accountability expectations that CAHEA has established. NAACLS also confirms the Code of Good Practice of the Association of Specialized and Professional Accreditation. NAACLS contact information is provided below:

National Accrediting Agency for Clinical Laboratory Sciences
5600 N. River Road, Suite 720
Rosemont, IL, 60018-5119
Ph.: 773-714-8880
Fax: 773-714-8886
E-mail: info@naacls.org
www.naacls.org

Please see Appendix G for notice of accreditation award.

Heidi C. Schneiter
231 W. Kimberly Drive
Henderson, NV 89015

EDUCATION

University of Nevada, Las Vegas
Las Vegas, Nevada
Master of Education in Curriculum and Instruction
Emphasis: Career and Technical and Post-Secondary Education, 2013

University of Wisconsin-Oshkosh
Oshkosh, Wisconsin
Bachelor of Science/Letters and Science Medical Technology
Minor: Chemistry, 1986

CERTIFICATIONS

American Society of Clinical Pathologists (ASCP)
Certified Medical Technologist #169458_1986 to present

LICENSURE

State of Nevada Department of Health and Human Services
Licensed General Supervisor
Clinical Laboratory Technologist #2092TGS-10_1993 to present

ASSOCIATIONS

American Society for Clinical Pathology
Associate Member_1986 to present

American Society for Clinical Laboratory Science
Professional I Member_ 2012 to present

ACADEMIC EXPERIENCE

College of Southern Nevada
Las Vegas, Nevada

Program Director_4/2014 to present
Clinical Laboratory Science Program

Professor_2015 to present

Interim Program Director_7/2008 to 4/2014
Clinical Laboratory Science Program

Appendix A: Faculty

Instructor_8/2004 to present
Clinical Laboratory Science Program
Publications and Presentations

Gordon, H. R. D., Schneiter, H., & Bryant, R. (2016). Staff members' perceptions of student- veterans' transition. *Educational Research: Theory & Practice, 28*(1), 1 – 14.

Gordon, H. R. D., Schneiter, H., & Bryant, R. (2016). Academic faculty members' perceptions of student-veterans' transition. *Educational Research: Theory & Practice, 28*(2), 1 – 8.

Paper Session: Presented at American Public Health Association Annual Conference
October 31, 2016
Staff Members' Perceptions of Student Veterans' Transition at a Public Two-Year and Four-Year Institution
Howard Gordon, University of Nevada, Las Vegas
Heidi Schneiter, College of Southern Nevada
Ross Bryant, University of Nevada, Las Vegas

Paper Session: Presented at Northern Rocky Mountain Educational Research Association Annual Conference
October 7, 2016
Academic Faculty Members' Perceptions of Student-Veterans' Transition
Howard Gordon, University of Nevada, Las Vegas
Heidi Schneiter, College of Southern Nevada
Ross Bryant, University of Nevada, Las Vegas

Breakout Session: Presented at Nevada Public Health Association Annual Conference
September 23, 2016
Steff Members' Perceptions of Student-Veterans' Transition in Southern Nevada: Implications for Public Health
Howard Gordon, University of Nevada, Las Vegas
Heidi Schneiter, College of Southern Nevada
Ross Bryant, University of Nevada, Las Vegas
Vanessa Winn, College of Southern Nevada

COLLEGE OF SOUTHERN NEVADA SERVICE

College Assessment Council_2015-2016
Faculty Senate Curriculum Committee_2016 to present
General Education Curriculum Committee_2016 to present
Strategic Enrollment Planning Committee, Member_2013 to 2016
College Student Success Committee_2015-2018
Faculty Senator, Member_2006 to 2011; 2018 to present
Science and Technology Expo_2005 to present
Hiring Committees
- 2014-Dental Hygiene Instructor (chair of committee)
- 2014-Clinical Laboratory Science Instructor

ENGELSTAD SCHOOL OF HEALTH SCIENCES SERVICE

Program Directors Committee, Member_2008 to present
Clinical Laboratory Science Advisory Committee, Chair_2009 to present
ESHS Assessment Committee_2015-present
ESHS Strategic Planning Committee_2017 to present
Clinical Laboratory Science Advisory Committee, Member_2005 to 2008
Limited Entry Selection Committee, Member_2008 to present
Limited Entry Policy Committee, Member_2012 to present
Curriculum Committee, Member_2012 to present
Curriculum Committee, Chair_2016 to present
Development and Implementation of BAS-MLS degree_2010-2012

COMMUNITY SERVICE

Science and Technology Expo_2005 to present
Health Career Explorations Camp_2018

CLINICAL EXPERIENCE

Quest Diagnostics
Las Vegas, Nevada

Clinical Chemistry Department
Supervisor/Technologist_2/2000 to 10/2007

Associated Pathologist Laboratory
Las Vegas, Nevada

Hematology; Clinical Chemistry; Urinalysis
Technologist_12/1993 to 7/1998

The Blood Center of Southeastern Wisconsin
Milwaukee, Wisconsin
Hemostasis Laboratory
Technologist_12/1991 to 12/1993

Kaukauna Community Hospital
Kaukauna, Wisconsin
Laboratory Manager/Technologist_12/1991 to 2/1993

St. Elizabeth's Hospital
Appleton, Wisconsin
Shift Supervisor/Technologist_9/1986 to 12/1991

Patricia Armour
1401 Nadine Way
Boulder City, Nevada 89005
pat_armour@icloud.com

EDUCATION

Doctor of Philosophy– Health Related Sciences July, 2013-June, 2018

Major: Clinical Laboratory Science

Virginia Commonwealth University (VCU) Richmond, Virginia

Dissertation: Usefulness of the Captia™ Syphilis IgG EIA test method and reverse algorithm for detection of syphilis infection in a public health setting

Master of Public Administration January, 2008-August, 2011

University of Nevada Las Vegas (UNLV) Las Vegas, Nevada

Bachelor of Science-Medical Technology September, 1969-May, 1973

University of Wisconsin-Superior (UW-S) Superior, Wisconsin

Internship - Medical Technology May, 1972-May, 1973

St. Luke's Hospital Duluth, Minnesota

LICENSURE AND CERTIFICATION

Medical Technologist (ASCP) #087074 Issued October 17, 1973

State of Nevada General Supervisor Clinical Laboratory Technologist #93TGS-8 Issued January 13, 2003

WORK EXPERIENCE

Faculty Instructor – Medical Laboratory Program August, 2016 – present

College of Southern Nevada Las Vegas, Nevada

- Current tenure track instructor for Certificate, Associate, and Bachelor level lecture and laboratory courses in Clinical Laboratory Science phlebotomy, hematology, microbiology, laboratory operations, and review
- Participated in student assistance and advisement, specifically for prospective phlebotomy students
- Maintained five hours per week office hours
- Participated in multiple college service activities including ESHS Summer Explorations Camp for Clark County School District (CCSD) High School Juniors and Seniors

- Participated in multiple professional development activities including 2016 and 2018 renewal of Nevada State General Supervisor license with completion of 20 Continuing Education (CE) hours for each renewal period and poster presentation at the CSN 6th Annual Poster Fair on Student Success in January 2019
- Chairman, College of Southern Nevada (CSN) Engelstad School of Health Sciences (ESHS) Strategic Planning Taskforce
- Committee member ESHS Interprofessional Education committee
- Committee member ESHS Program Director/Huddle committee
- Committee member ESHS Scholarship committee
- Committee member CSN Faculty Senate Salary and Benefits committee

Laboratory Manager/Responsible Official/Technical Supervisor June, 2003 - August, 2016

Southern Nevada Health District Las Vegas, Nevada

- Established new branch of Nevada State Public Health Laboratory, the Southern Nevada Public Health Laboratory (SNPHL), to perform emerging pathogens, epidemiological, and sexually transmitted disease testing for Southern Nevada Health District (SNHD) and Centers for Disease Control and Prevention (CDC) Laboratory Response Network (LRN) bioterrorism testing.
- Developed staffing plan and hired 18 technical and clerical staff.
- Developed and provided staff training and competencies for Laboratory Information Management System (LIMS), safety, security, incident response, molecular, microbiology, immunology, hematology and phlebotomy.
- Prepared and managed $3.2 million annual budget including inventory control and supply management.
- Managed multiple grants including $1.2 million CDC Public Health Emergency Preparedness (PHEP) cooperative agreement.
- Planned, installed, and administered LIMS (Allscripts Sunrise Lab) including multiple instrument interfaces.
- Maintained readiness for State and Federal Clinical Laboratory Improvement Amendments (CLIA) inspections and participated in multiple inspections. Provided written documentation for corrective action taken to address any deficiencies identified during the inspection.
- Developed and implemented Food and Drug Administration (FDA) and non-FDA approved test method verification protocols including Individualized Quality Control Plan (IQCP) for multiple molecular, microbiology, hematology, and immunology test methods. Established laboratory test performance criteria.
- Performed high complexity molecular testing for respiratory, gastrointestinal, and bioterrorism agents.
- Performed moderate to high complexity microbiology, immunology, hematology, and microbiology testing.
- Maintained compliance with requirements of the Federal Select Agent Program (FSAP) including facility operation of a Biosafety Level 3 (BSL3) laboratory, security, biosafety, and incident response as designated Responsible Official (RO). Participated in multiple FSAP inspections and provided written documentation for corrective actions taken to address any identified deficiencies.
- Developed and maintained SNPHL safety and health program including staff training.
- Participated in multiple SNHD epidemiological outbreak investigations as laboratory team lead.
- Established and monitored Quality Control (QC) and Quality Assurance (QA) for all departments including enrollment in proficiency testing, establishment of acceptable levels of analytic test performance, and creation of procedures in Clinical and Laboratory Standards Institute (CLSI) format.
- Resolved technical problems and ensured remedial actions were taken when test systems deviated from established performance specifications.
- Ensured test results were not reported until all corrective actions were taken and test systems were functioning as expected.

- Developed and maintained local courier service.
- Created monthly reports and laboratory statistics.
- Developed bioterrorism agent collection protocols and training for First Responders and Federal Bureau of Investigation (FBI).
- Completed Collaborative Institutional Training Initiative (CITI) Basic Biomedical Research training.
- Completed College of American Pathologists (CAP) laboratory inspector training and participated on state laboratory inspection team.

Laboratory Technologist October, 1991-June, 2003

Family Doctors of Boulder City Boulder City, Nevada

- Supervised and trained two employees at busy physician office laboratory.
- Performed testing, calibration, and maintenance of automated chemistry, urinalysis, and hematology equipment.
- Developed and provided waived and moderate complexity test training and competencies for laboratory and clinic staff.
- Installed and maintained LIMS (Antek LabDaq) including instrument interfaces. Assisted with development of LIMS billing interface with internal office electronic health record (EHR).
- Developed and completed method verification of multiple FDA approved test methods and established laboratory performance criteria.
- Developed QC and QA programs. Interpreted QC records and maintained QA program, including establishment of acceptable levels of analytic performance.
- Ensured enrollment in approved proficiency testing program, monitored participation, and reviewed results.
- Resolved technical problems and ensured remedial actions were taken when test systems deviated from established performance specifications.
- Ensured test results were not reported until all corrective actions were taken and test systems were functioning as expected.
- Purchased supplies and maintained inventory.
- Established and wrote laboratory policies and procedures.
- Maintained readiness for state CLIA inspections; participated in multiple inspections and prepared written response to any identified deficiencies.
- Received national recognition from Medical Laboratory Observer as 2003 Medical Laboratory of the Year.

Senior Scientist - Quality Assurance Department June, 1990 – October 1991

Lockheed Engineering and Sciences Company Las Vegas, Nevada

- Performed technical review of organic analysis data produced by laboratories in the Contract Laboratory Program (CLP) and prepared detailed reports.
- Developed and wrote Standard Operating Procedures (SOPs) for Quality Assurance Department (QAD).
- Streamlined procedures for storage, inventory, and disposition of data packages.
- Prepared weekly, monthly, and semi-annual reports for QAD.
- Coordinated flow of information from the US Environmental Protection Agency (EPA) to Lockheed Engineering and Sciences Company.

Medical Technologist November, 1981-June, 1990

Boulder City Hospital — Boulder City, Nevada

- Performed phlebotomy, chemistry, hematology, coagulation, urology, microbiology, and transfusion medicine testing at 35-bed acute hospital.
- Maintained multiple chemistry, hematology, and coagulation analyzers.
- Purchased laboratory supplies and maintained inventory.
- Wrote and revised laboratory procedure manuals; interpreted QC records.
- Maintained readiness for state and CAP inspections, participated in inspections, and responded to inspection deficiencies.
- Participated in proficiency and staff competency testing.

Medical Technologist — July, 1978-September, 1981

Superior Memorial Hospital — Superior, Wisconsin

- Performed phlebotomy, chemistry, hematology, coagulation, special chemistry, urology, immunology, microbiology, and transfusion medicine testing at 120-bed acute care hospital laboratory.
- Maintained multiple automated chemistry, hematology, and coagulation analyzers.
- Participated in proficiency and staff competency testing.

Hematology/Coagulation Supervisor — September, 1975-June, 1978

Sunrise Hospital — Las Vegas, Nevada

- Supervised and trained 7 staff in hematology/coagulation section of 500-bed acute care hospital laboratory.
- Wrote and revised laboratory procedure manuals; interpreted QC records.
- Developed work schedules and maintained supplies.
- Implemented installation of LIMS (Med-Lab) for hematology/coagulation section.
- Maintained readiness for and participated in CAP inspections.
- Monitored proficiency testing performance and provided written response to failed events.\
- Trained staff and provided staff competency testing.

Medical Technologist — February,1974-September,1975

Superior Memorial Hospital — Superior, Wisconsin

Same duties as previously described for this hospital.

Medical Technologist — May, 1973-February, 1974

St. Luke's Hospital — Duluth, Minnesota

- Performed phlebotomy, hematology, coagulation, urology, microbiology, chemistry, and transfusion medicine testing in 300-bed acute care hospital.
- Maintained multiple automated laboratory equipment.

GRANTS

Principal Investigator $20,000 Quality Initiatives grant from Association of Public Health Laboratories (APHL) in 2010 to establish year-round pediatric respiratory virus surveillance testing at SNPHL.

Principal Investigator $10,000 Quality Initiatives grant from APHL in 2014 to develop and provide biosafety training to Clark County, Nevada clinical microbiology laboratories.

COMMITTEE MEMBERSHIP

CSN ESHS Strategic Planning Taskforce, Chairman 2017-current

CSN Inter-professional Education (IPE) Committee 2017-current

CSN ESHS Program Director/Huddle Committee 2017-current

CSN Faculty Senate Salary and Benefits Committee 2018-current

CSN ESHS Scholarship Committee 2018-present

APHL Sexually Transmitted Disease (STD) subcommittee 2012-2018

UNLV Institutional Biosafety Committee (IBC) 2005-2016

SNHD Safety Committee and Outbreak Investigation Team 2005-2016

SKILLS

Excellent laboratory technical skills in testing, interpreting, and reporting of biological and environmental samples
Extensive knowledge of calibrating, operating, and maintaining automated laboratory equipment
Experienced in laboratory safety including establishing and implementing safety and health programs
Excellent Quality Assurance, process improvement, and workflow analysis skills
28 years laboratory supervisory/managerial experience including staff training and competencies
Proficient in computer operation including Word, Excel, SPSS, PowerPoint, Visio, Publisher, Blackboard, SoftChalk, and Canvas
Excellent organizational skills
Excellent writing skills
Excellent oral presentation skills
Excellent leadership skills
Excellent technical and training skills

PUBLICATIONS AND PRESENTATIONS

Armour, P. (2018). *Usefulness of the Captia™ Syphilis IgG EIA test method and reverse algorithm for detection of syphilis infection in a public health setting.* (Doctoral dissertation). Retrieved from https://scholarscompass.vcu.edu/etd/5341/

Armour, P., Nguyen, L., Lutman, M., and Middaugh, J. (2013). Evaluation of the Novel Respiratory Virus Surveillance program: Pediatric Early Warning Sentinel Surveillance (PEWSS). *Public Health Reports,128*(Suppl 2), 88-96.

Fischer, G.E., Schaefer, M.K., Labus, B.J., Sands, L., Rowley, P., Azzam, I.A., Armour, P., Khudyakov, Y.E., Lin,
Y., Zia, G., Patel, P.R., Perz, J.F. and Holmberg, S.D. (2010). Hepatitis C Virus Infections from Unsafe Injection Practices at an Endoscopy Clinic in Las Vegas, Nevada, 2007-2008. *Clinical Infectious Diseases, 51*(3), 267-273.

Armour, P., Cruzada, S., Schneiter, H., and Simpson, M. (2019, January). *Assessment of Learner Competency Using Classroom Assessment Technique (CAD) 39: Process Analysis.* Poster session presented at the College of Southern Nevada 6th Annual Poster Fair on Student Success, Las Vegas, Nevada.

Armour, P. (2016). *Hepatitis C Outbreak in a Las Vegas Endoscopy Center – the rest of the story*. Presented at 2016 American Association of Bioanalysts (AAB) Educational Conference, Las Vegas, Nevada.

Armour, P. (2013). *Steps in a Foodborne Outbreak Investigation*. Presented at 2013 American Association of Bioanalysts (AAB) Educational Conference, Las Vegas, Nevada.

Armour, P. (2011). *Syphilis sample collection, testing and result interpretation*. Presented at SNHD Disease Investigation and Intervention Specialists quarterly meeting, Las Vegas, Nevada.

Armour, P. (2011). *Internal Safety Training at SNPHL.* Presented at CDC National Laboratory Training Network (NLTN) Conference VI, Portland, Oregon.

Armour, P. (2011). *Public Health Control of Infectious Diseases.* Presented to UNLV Nursing students, Las Vegas,
Nevada.

COMMUNITY ACTIVITIES

President, Andrew J Mitchell Elementary School Parent-Teacher Association (PTA), Boulder City, Nevada
President and Treasurer, Boulder City Henderson Swim Team
Treasurer, Boulder City Little League
Treasurer, Boulder City American Legion Baseball Team
Commissioner, Boulder City Park and Recreation Commission
Back Stage Manager, Dance Etc Dance Studio, Boulder City, Nevada

RESUME

Michael B. Simpson
4504 San Joaquin Ave.
Las Vegas, NV 89102
Michael.Simpson@CSN.EDU

EDUCATION

1973
Bachelor of Arts: Adams State University
Alamosa, Colorado

1986
Master of Science: Northern Arizona University
Flagstaff, Arizona

PROFESSIONAL CERTIFICATION

1975-Present
MT (ASCP) 097466

1988-Present State of Nevada
General Supervisor 443TGS-13

1987
Georgia C3b Technologist
Medicare Eligible

PUBLICATION

The Utility of Acute Phase Proteins in Early Disease Detection
Presented by Co-Author Timothy N. Warner PhD.
1988 Miami ASM Convention
Abstracts of the Annual Meeting of the American Society for Microbiology 1988, 8-13 May 1988, Miami Beach, Florida

TEXTBOOK REVIEWS

Textbook of Diagnostic Microbiology, Sixth Ed.
Mahon/Lehman
Elsevier 2019

Phlebotomy Essentials, 6th. Ed.
McCall/Tankersley
Wolters Kluwer 2016

DOMESTIC PRESENTATIONS

PAMET USA 15th National Convention
ZIKA Virus, Past Present and Future
August 5, 2016
Las Vegas, Nevada

INTERNATIONAL PRESENTATIONS

First Cagayan Valley PAMET Inter-Chapters CPD Assembly 2018
Anticoagulant Therapy Past, Present and Future
Tumor Markers
Saint Mary's University
Bayombong, Nueva Vizcaya, Philippines
July 22, 2018

EMPLOYMENT HISTORY

08/20/2012-Present
CLS Professor
College of Southern Nevada
Las Vegas, Nevada

05/24-2018-Present
Per Diem General Supervisor
and
Clinical Coordinator for CSN CLS Program
Lab Express
4550 East Charleston Blvd., Las Vegas, Nevada 89104

June 2014-December 2018
Per Diem General Supervisor
Diagnostic Center of Medicine
Las Vegas, Nevada

11/15/2007 - 08/16/2012 Full Time
8/16/2012 - June 2014 per Diem
Staff Technologist/General Supervisor
Desert View Hospital
Pahrump, Nevada

2000-July 20, 2007
Grave Shift Supervisor
Quest @ Valley Hospital
Las Vegas, Nevada

1992-2000
APL Micro/Viro Tech
APL Laboratories Inc.
Las Vegas, Nevada

1991-1992
Part Time Micro Tech
APL Laboratories Inc.
Las Vegas, Nevada

1990-1992
Laboratory Manager
Diagnostic Center of Internal Medicine
Las Vegas, Nevada

1989-1990
APL Laboratories Inc.
Micro/Viro Tech
Las Vegas, Nevada

1987-1989
Laboratory Manager
NYE Regional Medical Center
Tonopah, Nevada

Summer of 1987
Conejos Community Hospital
Medical Technologist/Blood Gas/ECG Tech
Lajara, Colorado

1986-1987
Ria Technologist
Smith-Kline/Bioscience
Atlanta, Georgia

1979-1986
Swing Shift Supervisor
Flagstaff Medical Center
Flagstaff, Arizona

1978-1979
Graduate Teaching Assistant
University of Arizona
Tucson, Arizona

1976-1978
Staff Technologist
Flagstaff Community Hospital
Flagstaff, Arizona

1974-1976
Staff Technologist/ECG Tech
Alamosa Community Hospital
Alamosa, Colorado

1973-1974
Medical Technology Internship
Parkview Episcopal Hospital
Pueblo, Colorado

FACULTY PROFILE

Name: **SHIRLEY F. CRUZADA, Ed.D., MS, MT (AMT)**

Office: **Bldg. A – 158J CSN West Charleston Campus**

E-mail Address: **shirley.cruzada@csn.edu**

Office Phone: **(702) 651-7378**

Academic Qualifications:

1. Doctor of Education (major in Educational Management)
   Trinity University of Asia, Quezon City, Philippines

2. Master of Science in Public Health (major in Med. Parasitology, with Med. Microbiology as cognate) University of the Philippines in Manila

3. Bachelor of Science in Medical Technology
   Far Eastern University, Manila

Tenure Status: Professor since 2010

Scholarly/Creative Activities: (2014-2018)

Prepared PowerPoint presentations on the following lecture topics that I delivered during the Philippine Association of Medical Technologists (PAMET) Nevada Chapter and PAMET-USA, Inc. Continuing education (CE) seminars:

a) Alzheimer's Disease: Updates on Clinical Laboratory Tests
b) Stem Cell Transplantation: From Research Laboratory to Standard Care of Treatment
c) Stress and Its Effect on the Immune System
d) Blood Type: Implications on Diet and Personality
e) Endovascular Disease: Up Close and Personal

Institutional Service:

a) Member, Search Committee
   =Participated in the selection of the top three candidates for the vacant faculty positions in the college.
   =Was in three search committees for 2018 alone.
b) Member, Inter-Professional Education (IPE) Committee
   =Participated, together with the CLS Faculty and students in the Health Fairs held by the IPE Committee in 2017 and 2018.

Professional Service:

a) Served as lecturer in the Continuing Education Seminars of the PAMET-USA, Inc. (Philippine Association of Medical Technologists working in the USA) during national conventions from 2014 – 2018 as well as in the quarterly seminars of PAMET USA – Nevada Chapter.

b) Volunteered as Inspirational Speaker to MT undergraduates and graduates in the Philippines during my yearly Christmas vacations. I had to coordinate with the Philippine Association of Schools of Medical Technology & Hygiene (PASMETH) and the different MT Schools and Review Centers for my "giving back" lectures. My lecture was on the importance of the MT profession in health care delivery and on the job opportunities available in the USA (based on the latest ASCP Wage and Vacancy Survey results).

=delivered my lecture in 2 review centers in December 2016 and 2017.

=Dec. 21, 2018 = Pioneer Educational Review Center, Manila

=Jan 7, 2019 =joint PASMETH Academy and Top One Master Review Center, Manila

=Jan 8, 2019 AM =College of Medical Technology, Trinity University of Asia, Quezon City

PM =Pioneer Educational Review Center (with the new batch of reviewees)

=Jan 9, 2019 =Acts Review Center, Manila

Professional Development Activities for the past five years:

a) President =PAMET USA-Nevada Chapter, 2014 – 2015
=conducted quarterly CE seminars with myself and invited guests as speakers;
=conducted community projects of the chapter; and
=represented the chapter in the PAMET USA, Inc. national conventions and executive board meetings.

b) President =PAMET USA, Inc., 2016 – 2018
=presided over national conventions and executive board meetings;
=participated in CE seminars as speaker; and
=attended the different chapters' induction activities as keynote speaker / inducting officer.

c) Auditor =FEU-NRMF MTIAS, 2018 - 2020
=This is the Far Eastern University – Nicanor Reyes Medical Foundation Medical Technology International Alumni Society composed of graduates working in the USA and Canada. We provide scholarships to indigent but academically qualified MT students. We also conduct medical missions in remote communities and provide CE lectures in the USA and Philippines.

Larry Pitkin

College of Southern Nevada
Staff Research Associate II-Specializing in Microbiology
Part-time Phlebotomy Instructor
2000-Present

Summary of Qualifications

1. Graduate of CSN in the year 2000 with an Associate Degree in Medical Laboratory Sciences.
2. Certified in the year 2000 as a Medical Laboratory Technician and Phlebotomy Technician by ASCP (American Society of Clinical Pathologists) MLT#061280 PBT#017976
3. Licensed by the State of Nevada as a Medical Technician License #9466CM-4

Tenure

1. As a Classified Employee, I am not eligible for Tenure.

Scholarly and Creative Activities

1. Created and actively participate in every Science Fair held at the Cheyenne Campus for the last 5 years.
2. Participate in classroom demonstrations and activities with High School students during special events and camps.

Professional Development Activities

1. Nine Continuing Education Credits per year through ASCP (American Society of Clinical Pathologists) is 45 Continuing education credits CEU's in the last 5 years.

Medical Laboratory Technician

ASSOCIATE OF APPLIED SCIENCE DEGREE (AAS) | REQUIRED CREDITS: 66 | LIMITED ENTRY | DEGREE CODE: MLTECH-AAS

This is a limited-entry program. Some of these courses are program prerequisites and MUST be completed before a student is considered eligible for entry into the Program. Students MUST attend a Health Programs orientation and meet with a Health Programs advisor for additional advisement.

DESCRIPTION

The Medical Laboratory Technician (MLT) is an important member of the health care team in hospitals, clinics, medical research, and teaching centers, and is an indispensable participant with physicians in providing critical diagnostic information. The MLT functions as a dependable, ambitious, and highly motivated professional capable of handling high stress situations with ease and confidence.

The MLT performs diagnostic laboratory procedures using state-of-the-art instrumentation to aid in the detection, diagnosis, and treatment of disease; monitors the standards of accuracy and precision in the performance of tests; performs routine preventive maintenance and troubleshoots instrument problems; and participates in research and evaluation of new procedures.

The Medical Laboratory Technology program is a two year program. It combines academic and laboratory courses on campus with practical experience at clinical affiliates. This program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Road, Suite 720, Rosemont, IL 60018-5119, (847) 939-3597. Students successfully completing the program are eligible to take the National Certification examination.

Upon successful completion of the above, the student may apply to the State of Nevada for the required license as a Medical Technician.

STUDENT LEARNING OUTCOMES

- Assess and correlate clinical and/or laboratory data through the application of theory and principles.
- Perform and/or interpret laboratory calculations.
- Select appropriate courses of action in accordance with established laboratory procedures.
- Evaluate laboratory data to recognize, and report, clinically relevant results according to established procedures.

PLEASE NOTE - The courses listed below may require a prerequisite or corequisite. Read course descriptions before registering for classes. All MATH and ENG courses numbered 01-99 must be completed before reaching 30 total college-level credits. No course under 100-level counts toward degree completion.

GENERAL EDUCATION REQUIREMENTS (31 CREDITS)

MATHEMATICS (3 credits)
MATH 124 or above

ENGLISH COMPOSITION (3-5 credits)
ENG 100 or 101 or 113

COMMUNICATIONS (3 credits)
ENG 102 or 114

HUMAN RELATIONS (3 credits)
Recommended: PHIL 135 Introduction to Ethics

NATURAL SCIENCE (12 credits)
BIOL 189 or 196 **and** CHEM 110 **and** 111; or CHEM 121 **and** 122

FINE ARTS/HUMANITIES/SOCIAL SCIENCES (3 credits)
Recommended: COM 101 Oral Communication

U.S. AND NEVADA CONSTITUTIONS (4-6 credits)
Recommended: PSC 101 Introduction to American Politics

SPECIAL PROGRAM REQUIREMENTS (35 CREDITS)

CLS 151	Phlebotomy	2
CLS 152	Applied Phlebotomy	2
CLS 153	Phlebotomy Clinical Practicum	2
CLS 161	Urinalysis and Body Fluids	1
CLS 162	Applied Urinalysis and Body Fluids	1
CLS 241	Clinical Chemistry I	3
CLS 242	Applied Clinical Chemistry I	2
CLS 251	Immunology/Immunohematology I	2
CLS 252	Applied Immunology/Immunohematology I	2
CLS 265	Laboratory Operations I	1
CLS 271	Clinical Microbiology I	3
CLS 272	Applied Clinical Microbiology I	2
CLS 291	Hematology I	2
CLS 292	Applied Hematology I	2
CLS 294	Clinical Practicum I	2
CLS 295	Clinical Practicum II	2
CLS 296	Clinical Practicum III	4

See Degree Plan on next page.

NOTE
- Course numbers with the "B" suffix may be non-transferable for a NSHE baccalaureate degree.
- Course numbers with the "H" suffix are designated Honors-level courses and can be used to fulfill equivalent general education requirements. For more information visit www.csn.edu/honors.
- In no case, may one course be used to meet more than one requirement except for the Values and Diversity general education requirement (only AA, AS, and AB degrees) which may be used to fulfill the corresponding general education or emphasis requirement.
- Students may elect to graduate using the degree requirements in effect at the time of matriculation, or when they declared or changed major or the current catalog. If a program is official after a student has matriculated, the student may choose the degree requirements of the new program. In no case may a student use a catalog which is more than six years old at the time of graduation.

Medical Laboratory Technician

ASSOCIATE OF APPLIED SCIENCE DEGREE (AAS) | REQUIRED CREDITS: 66 | LIMITED ENTRY | DEGREE CODE: MLTECH-AAS

FULL-TIME STUDENT DEGREE PLAN

Add more semesters to modify this plan to fit part-time student needs.

FIRST SEMESTER	Credits
Complete Mathematics (see courses previous page)	3
ENG 100 or 101 or 113	3-5
PHIL 135 Introduction to Ethics	3
BIOL 189 or BIOL 196[1]	4
TOTAL CREDITS	*13-15*

SECOND SEMESTER	Credits
ENG 102 or ENG 114	3
CHEM 110 or CHEM 121[2]	4
COM 101 Oral Communication	3
PSC 101 Introduction to American Politics	4
TOTAL CREDITS	*14*

THIRD SEMESTER	Credits
CHEM 111 or CHEM 122	4
CLS 161 Urinalysis and Body Fluids	1
CLS 162 Applied Urinalysis and Body Fluids	1
CLS 265 Laboratory Operations I	1
CLS 271 Clinical Microbiology I	3
CLS 272 Applied Clinical Microbiology I	2
TOTAL CREDITS	*12*

FOURTH SEMESTER	Credits
CLS 294 Clinical Practicum I	2
TOTAL CREDITS	*2*

FIFTH SEMESTER	Credits
CLS 151 Phlebotomy	2
CLS 152 Applied Phlebotomy	2
CLS 153 Phlebotomy Clinical Practicum	2
CLS 241 Clinical Chemistry I	3
CLS 242 Applied Clinical Chemistry I	2
TOTAL CREDITS	*11*

SIXTH SEMESTER	Credits
CLS 251 Immunology/Immunohematology I	2
CLS 252 Applied Immunology/Immunohematology I	2
CLS 291 Hematology I	2
CLS 292 Applied Hematology I	2
TOTAL CREDITS	*8*

SEVENTH SEMESTER	Credits
CLS 295 Clinical Practicum II	2
CLS 296 Clinical Practicum III	4
TOTAL CREDITS	*6*

DEGREE PLAN TOTAL CREDITS **66-68**

[1]Students planning to apply to the Bachelor of Science Medical Laboratory Scientist Program should take BIOL 196.

[2]Prerequisite for CHEM 121 is CHEM 103 or CHEM 110; or a passing score on the Chemistry Placement Exam.

COLLEGE OF SOUTHERN NEVADA
MEDICAL LABORATORY TECHNICIAN
ASSOCIATE OF APPLIED SCIENCE
SPRING 2019 Selection Criteria

Qualified applicants must possess a High School Diploma, GED, or Higher Education Degree (Associate Degree or higher) and a minimum 2.0 cumulative program perquisite GPA. Applicants will be ranked and selected by the following point system:

CUMULATIVE PREREQUISITE GPA:

- 2.00 – 2.24 = 1pts
- 2.25 – 2.49 = 2pts
- 2.50 – 2.74 = 3pts
- 2.75 – 2.99 = 4pts
- 3.00 – 3.24 = 5pts
- 3.25 – 3.49 = 6pts
- 3.50 – 3.74 = 7pts
- 3.75 – 4.00 = 8pts

COMPLETION OF GENERAL EDCUATION COURSES (2 points):

- Points will be awarded ONLY if ALL General Education Requirements are completed with grades of "C" or above.

COMPLETION OF PREFERRED FINE ARTS/HUMANITIES/SOCIAL SCIENCES COURSE
(1 point):

- 1 Point will be rewarded for a "C" or better in PHIL 102.

COMPLETION OF HIGHER LEVEL CHEMISTRY (2 points):

- Points will be awarded ONLY if CHEM 121 and CHEM 122 are completed with grades "C" or above.

PREVIOUS EDUCATION/ADVANCED DEGREES (2 points):

- Higher Education Degrees of an Associate Degree or Higher from an Accredited College or University will receive 2 points towards selection.

CLINICAL LABORATORY SCIENCE (CLS) COURSE COMPLETION, CREDENTIAL, AND/OR WORK EXPERIENCE:

- **Points will be awarded if the student has documentation of successful completion of an NSHE Phlebotomy Certification Program (1 point):**
  Note: If phlebotomy certificate was not awarded from, an NSHE institution student must contact the Program Director of CLS for approval. Students must complete a phlebotomy program that provides clinical experience and preparation for a national credentialing exam from ASCP, AMT, or NCCT. Class must have been completed within 5 years of the MLT deadline date if not nationally credentialed.

- **National Phlebotomy Credential (2 points):**
  Points will be awarded if the student has earned a phlebotomy credential from one of the following:
  - ASCP (American Society for Clinical Pathology)
  - AMT (American Medical Technologist)
  - NCCT (National Center for Competency Testing)

- **Paid Medical Laboratory/Phlebotomy Experience (up to 2 points):**
  Points will be awarded if student have completed at least six months of paid experience within the last two years. CSN form completed by employer indicating work responsibilities and length of employment must be supplied. The Medical Laboratory/Phlebotomy Form is available online at https://at.csn.edu/sites/default/files/documents/clsworkexp.pdf.

These guidelines are subject to change without notification. Please contact CSN Health Programs Advising for information. 9/17

CSN COLLEGE OF SOUTHERN NEVADA

Limited Entry Application For Admission to a Health Science Program

Return this form to:
Limited-Entry Office
Charleston Campus
Sort Code WCK206, Bldg K-216
6375 West Charleston Blvd
Las Vegas, NV 89146-1164
Phone: (702) 651-5633 Fax: (702) 651- 7593

Please print or type the information below. **NOTE: It is the applicant's responsibility to notify the Limited-Entry Office and Office of the Registrar of any name, address, or telephone changes**

Name_____ _____
Last First Middle NSHE Number

Address_____
Number Street Apt. Number

_____ **Telephone**_____
City State Zip Daytime

E-mail Address_____ **Alternate Telephone**_____

Proof of attendance of the Mandatory Limited Entry Workshop: Certificate of Attendance or quiz _____

Date I met with a Health Programs Advisor:_____ Cannot apply without date

Indicate the program to which you are applying for admission: **NOTE: A separate application must be completed for each program if applying to more than one program. You can only apply to one track within a program**

- ☐ Cardiorespiratory Sciences - BAS
- ☐ Dental Hygiene
  - ☐ AS ☐ BS
  - (For the BSDH program, you must be a Licensed Dental Hygienist and have an Associate Degree in Dental Hygiene)
- ☐ Diagnostic Medical Sonography
  - ☐ Cardiac/Vascular ☐ General/Vascular
- ☐ Health Information Technology
- ☐ Medical Coding
- ☐ Medical Laboratory Technician
- ☐ Medical Laboratory Scientist
- ☐ Medical Assisting
- ☐ Nursing (RN)
  - ☐ Regular Track ☐ Extended Track
  - Nursing – Advanced Placement
- ☐ (Must have a NV Practical Nursing license) Ophthalmic Dispensing
- Physical Therapist Assistant
- ☐ Practical Nursing
- ☐ Radiation Therapy Technology ☐ Las Vegas ☐ Reno
- ☐ Surgical Technologist ☐ Las Vegas ☐ Reno
- ☐ Veterinary Technology ☐
- ☐ Veterinary Technology ☐

Indicate the semester for which you are currently applying: ☐ Spring ☐ Summer ☐ Fall Year_____
Are you currently enrolled in a Limited Entry program? ☐ Yes ☐ No ☐
Have you been enrolled in this program, or any other CSN Health Sciences Limited Entry Program? ☐ Yes ☐ No
If yes, refer to section E under TERMS of the Limited Entry Policy, to request Reinstatement/Re-Application
Are you transferring or have you transferred credits to CSN from another institution (including UNLV, UNR, NSC, TMCC, etc)?
☐ Yes ☐ No **If yes, please note that the evaluation of transfer credits is time-consuming. You must initiate and complete the "transfer of credits" process prior to the stated application deadline. To speed up this process, please use the TRANSFER CREDIT EVALUATION REQUEST form for Limited Entry Students, which can be found here: http://sites.csn.edu/health/pdf/transfercredit.pdf**

IT IS THE APPLICANT'S RESPONSIBILITY TO ENSURE THAT HIS/HER FILE IS COMPLETE AND THAT ALL NECESSARY DOCUMENTS ARE IN PLACE FOR EACH SELECTION PROCESS BEFORE THE STATED DEADLINE.

I certify that the above statements are true to the best of my knowledge.
I have read, understand and agree to comply with the Limited Entry Academic Programs Policy and Procedures.

Applicant's Signature_____ Date_____

Appendix B: Program Selection

Limited Entry Academic Programs Policy and Procedures

This policy becomes effective July 1, 2018, for admission to Limited Entry Health Programs and supersedes all previous policies.

The activities outlined in the document entitled "Ralph & Betty Engelstad School of Health Sciences Important Advising Information" is a part of the Limited Entry Academic Programs Policy and Procedures, and learners (students) are required to comply with the policies and procedures therein.

TERMS/CONDITIONS: Please read this policy very carefully. A signed and initialed copy of this policy must be submitted with your Limited Entry Application, the Completion Checklist, and all supporting documents/materials to the Limited Entry office on or before the specified program's application deadline date.

Prerequisites: The courses and/or documents established by the respective program as requirements for admission to the program.

- The program prerequisite courses will be used to calculate the GPA for selection into the program, and a letter grade of A, A-, B+, B, B-, C+ or C must be assigned to these courses.
- A letter grade of C- in a program prerequisite course is not acceptable.
- For purposes of calculating the GPA a "P, TP, S or TS" assigned to a course will be considered a "C" unless an official transcript is provided showing a different grade. If the course and grade can be verified as the course transferred to CSN, the grade on the official transcript will be used. Points will be awarded for "P, TP, S, or TS" if the course is listed on the Program's Selection Criteria Sheet as eligible to receive points for a grade of "C" or higher. If the Selection Criteria Sheet specifies a grade of "B" or higher, points will not be awarded for a grade less than a "B."
- Courses transferred in with a designation of "TR" on the MyCSN Transfer Credit Report will not be accepted unless an official transcript from the associated college is provided and the course and grade can be verified.
- Courses transferred in with a designation of "LELC" on the MyCSN Transfer Credit Report will not be accepted unless a copy of the signed substitution/waiver form, with all necessary signatures, including the Department Chair and Office of the Registrar is provided.
- The Limited Entry office is not responsible for any evaluation of courses including transfers, course equivalency, and substitution/waivers.
- GPA will be calculated using the number of credits that the course transfers in to the College of Southern Nevada. For example, earning a B in BIOL 223 at CSN (4 credits) equates to 12 points towards a cumulative GPA. A BIOL 223 course transferring in to CSN with a B (2.68 credits) equates to 8.04 points towards a cumulative GPA.
- Prerequisite courses cannot be waived.
- CLEP credits may be accepted for prerequisite courses, general education courses, and/or courses listed on the program's Selection Criteria Sheet. However, the CLEP course name and number of credits must appear on the CSN transcript or MyCSN Transfer Credit Report. CLEP scores/grades reported as a "P or TP", will be processed as a grade of "C". If CLEP scores only are reported, the following will be used to determine the grade: A score of 20 to 50 will be processed as a grade of C; a score of 51 to 59 will be processed as a B; a score of 60 to 80 will be processed as an A.
- Proof of completion of all program prerequisites, activities, and assessments must be in the Limited Entry office on or before the application deadline date.

Appendix B: Program Selection

A. College Science Grades and the Proficiency Exam: Grades earned in science courses either at CSN or at other institutions.

- In order to receive consideration for courses/grades from institutions other than CSN, those courses/grades must have been evaluated by CSN's Office of the Registrar, and must appear on the MyCSN Transfer Credit Report, on or before the program's specified deadline.
- **Science courses may be no older than seven (7) years at the time of the application deadline, except for applications to Bachelor Degree Programs.**
  The seven (7) year expiration for sciences courses **may be waived** by the respective Program Director. If all minimum requirements are met, and a waiver form is submitted for the seven (7) year rule on a science course(s), this will render the application file as "complete" and allow it to be processed along with all other qualified and "complete" applications. **(A Waiver Form waives the requirement. This allows the application to be considered along with all other applications (as if the waived requirement did not exist). Please note that prerequisite courses cannot be waived).**

- If a learner (student) passed a college transferable science course(s) with a grade of "C" or higher, more than seven (7) years ago, the learner may opt to take a proficiency exam instead of retaking the course. If the learner passes the **NLN (National League for Nursing) Proficiency Exam in the "50th percentile"**, the learner's previous course(s) and grade(s) will be accepted for the Limited Entry program, with a waiver form from the Program Director.
- Only one attempt at the proficiency exam will be permitted per subject area (Anatomy and Physiology, Microbiology, and Pharmacology). Each program is responsible for managing the proficiency exam. The proficiency exam is valid for 7 years.

B. Application Deadline: Date determined by the Program Director or Department Chair by which the Limited Entry office ***must*** ***receive*** the Limited Entry Application packet, as defined in paragraph G. **Nothing will be accepted** after the application deadline date.

C. Application to Multiple Limited Entry Programs – Provisions/Exceptions: During each application cycle, learners may apply to as many Limited Entry programs as he/she wishes, as long as the program's requirements have been met. A learner may not apply to another Limited Entry program if currently enrolled in a Limited Entry program. Only the following exceptions, with Program Director written approval, are permitted:

- Learners may apply to the Medical Coding and Health Information Technology programs during the same selection cycle and may accept positions in both Limited Entry programs.
- Learners enrolled in the Medical Laboratory Technician program may apply to the Medical Laboratory Scientist program as long as they are in good standing in the MLT program, and have satisfied all prerequisites, activities and assessments necessary to apply to the MLS program. An exception memorandum form must be submitted. **(An Exception Memorandum makes an exception to the requirement which allows Limited Entry to accept and process the application. However, the application will only be considered after all other applications that have met all minimum requirements necessary to apply, have been considered. Please note that an exception cannot be made for prerequisite courses).**
- Learners must be in good standing and satisfy all prerequisite and program requirements for the desired program.

D. Application to Multiple Program Tracks: Learners enrolled in either track of the Diagnostic Medical Sonography program may be allowed, with a waiver form from the Program Director, to apply to the other track as long as the following conditions are met:

- The learner is in good standing in the final semester of the track for which he/she is currently enrolled.
- The learner has satisfied all prerequisite courses and program requirements for the other track.

E. Reinstatement/Re-application: Any learner who voluntarily withdraws or has been subject to administrative withdrawal/termination from a Limited Entry program, must apply for reinstatement/re-application to be accepted into the same or a different Limited Entry program with the following provisions:

- Approval of reinstatement or re-application will be determined by the Reinstatement committee.
- Re-application to the same program may result in a point(s) deduction as stated on the Selection Criteria Sheet. This deduction may be 10% of the maximum possible points for the first re-application, as determined by the Program Director.
- Applications may be subject to an additional 10% point deduction for each subsequent re-application. The number of points deducted must appear on the Selection Criteria Sheet for each respective program.
- A point(s) deduction waiver form obtained from the Program Director for documented medical reasons or extenuating circumstances must be submitted with the application packet.
- Assigning or waiving of point deduction(s) may occur at the time of selection.
- There may be other conditions for re-admission as determined by the Program Director.
- The CSN School of Health Sciences Student Reinstatement policy is adopted as part of the Limited Entry Academic Program Policy and Procedures, and learners are required to comply with the policies therein. The policy can be found on the CSN Health Sciences website.

F. Acceptance into Multiple Limited Entry Programs - Provisions/Exceptions:

- If a learner is qualified and offered a position into more than one Limited Entry program during a selection cycle, the learner can accept a position into only **ONE** program.
  Once a position in a Limited Entry program has been accepted, all other applications become null-and-void. The "Accept/Decline" form must be received by the Limited Entry office within 10 days of the date of the letter or the position is forfeited. A position will not be held for any reason.
- Upon successful completion of a Limited Entry Program, a learner is eligible to apply to another program.
- Learners may accept simultaneous/co-enrollment in Medical Coding and Health Information Technology.

G. Complete Application Packet: The Limited Entry office will only accept/process "Complete" Limited Entry Application packets. A "Complete" Limited Entry Application packet is defined as one submitted on or before the program's specified application deadline and consists of all of the following:

- A completed Limited Entry Application form with current date, name, address, telephone number, and program choice.
- The entire Limited Entry Academic Programs Policy and Procedures, to include learner's initials on each page, with learner's signature and date on the final page.
- Date of mandatory meeting with a Health Programs Advisor, which can be no more than two years prior the program's specified application deadline. Only the Director of Health Programs Advising and Limited Entry Admissions can write an exception memorandum to this requirement.
- All learners, regardless of degree pursuing (AS, AAS, and COA), must meet with a Health Programs Advisor prior to submitting their application(s) to the Limited Entry office. **Bachelor Degree learners may meet with a Health Programs Advisor or Faculty Advisor/Program Director.**
- A copy of the mandatory Limited Entry Workshop Certificate-of-Attendance or quiz demonstrating a minimum of 80%. The mandatory workshop must be completed no more than two years prior to the program's specified application deadline date. Learners that have not passed the quiz on two attempts or have not completed the quiz within the two years must meet with the Limited Entry Coordinator. Only the Director of Health Programs Advising and Limited Entry Admissions can write an exception memo to this requirement.
- A completed, program-specific, Completion Checklist with all supporting documents. This form must be for the semester and program to which the learner is applying.

- Provider's note for medical and/or extenuating circumstances if re-application is approved by the Reinstatement committee.
- Proof of completion of all program prerequisites as listed on the Advisement Sheet, Selection Criteria Sheet and Completion Checklist.
- Results of appropriate pre-admission assessments, if applicable. Pre-admission assessments not taken at CSN must be transferred to CSN prior to the application deadline date.
- CSN formal evaluation of transcripts (MyCSN Transfer Credit Report) from other colleges, if applicable, including UNLV and NSC. Learner is responsible for ensuring MyCSN Transfer Credit Report reflects accurate course(s) and grade(s).
- Copy of signed substitution/waiver form, if applicable. This form must have all necessary signatures, including the Department Chair and Office of the Registrar.
- Standardized exception memorandum and/or waiver forms from the respective Program Director, if applicable. **Note: These forms are valid for the current selection cycle only.**
- All other program specific documentation listed on the Advisement Sheet, Selection Criteria Sheet and Completion Checklist.

H. Incomplete Application Packets: An "Incomplete" Application packet is one that does not contain all documents necessary to apply and/or does not meet minimum requirements as listed on the program's advising materials.

- Application packets that do not satisfy all program prerequisites will require an exception memorandum form from the Program Director making an exception for missing requirement(s) in order for an application to be processed. Program Directors are not, under any circumstances, obligated to provide an exception memorandum or waiver. **Note: An exception memorandum or waiver is only valid for the current selection cycle.**

I. The 3-Attempt Rule for Program Prerequisites:

- **If a prerequisite course has been taken three or more times, the highest of the first three attempts, including grades, withdrawals and audits, appearing in the learner's MyCSN** will be used for calculating the GPA.
- An exception memorandum form for the 3-Attempt-Rule may be obtained from the respective Program Director.
- The exception memorandum form to the 3-Attempt-Rule must indicate that the application will be considered only after all "complete" applications are considered and if adequate space in the program is available.
- A waiver form to the 3-Attempt-Rule must indicate that the application will be considered along with the all other "complete" applications.

  The exception memorandum or waiver form to the 3-Attempt-Rule must be included and submitted with the Limited Entry Application.

The 3-Attempt Rule does not apply to science courses older than seven (7) years.

LIMITED ENTRY SELECTION PROCESS:

The Limited Entry Selection Process is utilized to accept learners into the first semester of a Limited Entry program. The number of learners accepted into a Limited Entry program is determined by the respective Program Director. A selection committee for each program will review the application files and verify and/or confirm eligibility and points awarded. If the number of applications is less than the maximum number allowed based on the program's specification, all eligible and qualified applications will be accepted. The items for points, in this case, will not be verified or processed.

Appendix B: Program Selection

A. The Limited Entry Application and Completion Checklist

- These forms are available on-line on the CSN Health Sciences website.
- The application packet ***must be received*** **in the Limited Entry office on or before the program's specified application deadline date**.
- Complete application packets submitted on or before the program's application deadline and/or applications with a waiver form will be considered first.
- Applications that contain an exception memorandum form will be considered only after all "complete" applications are considered and if the program has adequate space available to accommodate additional learners.

B. If there are available positions remaining in the program after all applications have been accepted, then those applications not satisfying program prerequisites will be ranked and considered, and the next highest ranked application will be selected for entry into the program. A learner who has not successfully completed all sections of the pre-admission assessments with the minimum cut-off scores will earn 0 points for selection in the category for the pre-admission assessments. If **all prerequisites are not** completed successfully, with grades identifiable on the CSN transcript at the time of the application, then 0 points will be awarded for GPA.

C. Current program prerequisites, minimum acceptable grades, and deadline dates to apply are posted on the Advisement Sheets, which are available in the Health Programs Advising office and online. Advisement Sheets will be available one year prior to the application deadline. If advising materials are not approved by the Program Director and returned to the Health Programs Advising office within 15 working days prior to the program's application deadline, the current advising materials will be used until the next selection cycle. Once advising materials become public, they cannot be altered until the next selection cycle. CSN may modify prerequisites with a minimum of one year's notice. Actual program courses are subject to revision and will have no impact on program admission.

D. Program Directors may issue an exception memorandum form for prerequisite requirements if they deem this necessary to fill available positions. An exception memorandum form is **valid for the current selection only**, and must specifically address/justify each prerequisite that has not been met. A Program Director may not submit exception memorandums for all program prerequisites for any learner. It is the responsibility of the Program Director to ensure that the conditions listed on the exception memorandum form are satisfied. If the learner does not meet the conditions, he/she may be administratively withdrawn and will be required to apply for reinstatement/re-application during a later enrollment cycle.

E. After the initial processing of all application files, a selection committee will review the files to ensure accuracy of content and make the final selection of applicants into the program as well as an alternate list. Learners with equal points will be ranked by a computerized random selection.

F. Each learner who applies on or before the application deadline will be notified in writing of the results of the selection process.

G. If a learner is not admitted into a program, the current application is considered closed. **Waiting lists are not maintained. Learners who reapply must meet current requirements and reproduce all supporting documents. The Limited Entry office does not retain prior applications or supporting documents.**

H. Accepting/Declining an offered Position in a Limited Entry Program: Each learner who is offered a position in a Limited Entry program must:

- Return a signed "Accept/Decline" form indicating whether the learner accepts or declines the position within 10 days of the date of the acceptance letter to the Limited Entry office. In the event that a signed "Accept/Decline" form is not received in the Limited Entry office by the specified date, the position will be offered to an alternate.
- Attend orientations/events at the time scheduled by the respective program or the position may be offered to an alternate. Learners arriving late to the program-specific orientation, may not be allowed to attend, therefore forfeiting their position in the program.
- For programs ***with*** mandatory orientations: Learners who sign an "Accept/Decline" form indicating they are accepting a position in a Limited Entry program and then do not ***attend*** the mandatory orientation(s) will be administratively withdrawn, and be required to reapply through the Limited Entry office.
- For programs ***without*** mandatory orientations: Learners who sign an "Accept/Decline" form indicating they are accepting a position in a Limited Entry program and then do not ***enroll*** in program courses will be administratively withdrawn, and be required to reapply through the Limited Entry office.

I. Learners will have 15 days from the date of the notification letter to appeal the result of the selection. The appeal must be in writing, addressed to the Dean of the School of Health Sciences and contain a detailed explanation for the appeal. The Dean will respond within 10 working days.

Janice L. Glasper 7/1/18

Janice L. Glasper, M.Ed., RDMS, RVT, Date
Interim Dean/Health Sciences

FALL 2017 **Instructors: Pat Armour and Heidi Schneiter**

LEAP Outcome	LEAP objective	CLS MLT Student Learning Outcome	CLS MLT program Measure/Instrument	Result	Analysis
LEAP Outcome Goal 1: Knowledge of Human Cultures and the Physical and Natural World	LEAP Objective a: Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts	Select appropriate course of action in accordance with established laboratory procedures	CLS 152 Phlebotomy Lab Practical 2	13/13 phlebotomy students exceeded the maximum 90% performance standard	After instruction, study and practice, 100% (13/13) of CLS 152 phlebotomy students successfully performed each of the activities in the 8 steps of the Evacuated Tube System (ETS) venipuncture procedure.
LEAP Outcome Goal 2: Intellectual and Practical Skills	LEAP Objective d: Quantitative literacy e: Information literacy	Perform and/or interpret laboratory calculations	CLS 242 Applied Clinical Chemistry I: Laboratory Math exam	11/11 MLT students exceeded 75% performance standard	100% of MLT students successfully performed laboratory calculations; 90% exceeded 90% performance standard.
LEAP Outcome Goal 3: Personal and Social Responsibility	LEAP Objective c: Ethical reasoning and action d: Foundations and skills for lifelong learning	Evaluate laboratory data to recognize, and report, clinically relevant results according to established procedures	CLS 151 Phlebotomy Lecture Exam 1	11/13 phlebotomy students exceeded the 90% performance standard 2/13 students exceeded the 80% performance standard	100% (13/13) of CLS 151 students exceeded the 80% performance standard and were able to recognize preanalytic sources of error and QA indictors that impact laboratory results. Following exam completion, missed questions were discussed in class to ensure understanding.
LEAP Outcome Goal 4: Integrative and Applied Learning	LEAP Objective a: Synthesis and advanced accomplishment across general and specialized studies	Assess and correlate clinical and/or laboratory data through the application of theory and principles	CLS 241 & 242 Clinical Chemistry Selected case studies	11/11 MLT students exceeded 75% performance standard.	Overall, students on average successfully correlated clinical and laboratory data to assess patient status. Following completion of exams, case studies were discussed with the class to emphasize important information and key diagnostic criteria.

Spring 2018 CSN Medical Laboratory Science: Medical Laboratory Technician (MLT) program Pat Armour instructor

LEAP Outcome	LEAP objective	CLS MLT Student Learning Outcome	CLS MLT program Measure/Instrument	Benchmark	Result	Analysis
LEAP Outcome Goal 1: Knowledge of Human Cultures and the Physical and Natural World	LEAP Objective a: Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts	Select appropriate course of action in accordance with established laboratory procedures	CLS 272 Microbiology I Lab reports 1-21 CLS 265 Lab Ops I Problem sets 1-6 and Case Study	80% of students meet 75% performance standard	11/11 (100%) of CLS 272 MLT students exceeded the 80% performance standard 11/11 (100%) of CLS 265 MLT students exceeded the 80% performance standard	100% of the MLT students successfully selected the appropriate course of action for a variety of laboratory procedures. 82% (9/11) of lab ops and 100% (11/11) of micro students exceeded the 90% performance standard
LEAP Outcome Goal 2: Intellectual and Practical Skills	LEAP Objective d: Quantitative literacy	Perform and/or interpret laboratory calculations	CLS 272 Microbiology I Lab report 15: quantitative RPR CLS 265 Lab Ops I Unit 1 exam (Laboratory Math)	80% of students meet 75% performance standard	11/11 (100%) of CLS 272 MLT students exceeded the 80% performance standard 11/11 (100%) of CLS 265 MLT students exceeded the 80% performance standard	100% of the MLT students successfully performed and interpreted a variety of laboratory calculations. 82% (9/11) of lab ops and 91% (10/11) of micro students exceeded the 90% performance standard

Spring 2018 CSN Medical Laboratory Science: Medical Laboratory Technician (MLT) program Pat Armour instructor						
LEAP Outcome	**LEAP objective**	**CLS MLT Student Learning Outcome**	**CLS MLT program Measure/Instrument**	**Benchmark**	**Result**	**Analysis**
LEAP Outcome Goal 3: Personal and Social Responsibility	LEAP Objective c: Ethical reasoning and action d. Foundations and skills for lifelong learning	Evaluate laboratory data to recognize, and report, clinically relevant results according to established procedures	CLS 272 Microbiology I Lab report 14: Biosafety cabinet use; Critical Value reporting for positive blood culture; Gram stain QC CLS 265 Lab Ops I Unit 3 exam: Professionalism, Ethics, Safety	80% of students meet 75% performance standard	11/11 (100%) of CLS 272 and CLS 265 MLT students exceeded the 90% performance standard	100% of MLT students successfully recognized and reported clinically relevant results according to established procedures
LEAP Outcome Goal 4: Integrative and Applied Learning	LEAP Objective a: Synthesis and advanced accomplishment across general and specialized studies	Assess and correlate clinical and/or laboratory data through the application of theory and principles	CLS 272 Microbiology I Unknowns #1-7 Practical Exams #1-3 CLS 265 Lab Ops 1 Unit 2 exam: Quality Assurance	80% of students meet 75% performance standard	11/11 (100%) of CLS 272 and CLS 265 MLT students exceeded the 90% performance standard	100% of MLT students successfully correlated laboratory data for identification of unknown samples and application of Quality Assurance principles

COLLEGE OF SOUTHERN NEVADA
AAS-Medical Laboratory Technician
ANNUAL ASSESSMENT REPORTING FORM

Report of Academic Year: 2017-2018

Department: Dental Sciences, Diagnostic Evaluation and Rehabilitation Services

Date Report Completed: 2/26/19

Completed By: Heidi Schneiter

Contact Email: heidi.schneiter@csn.edu

Contact Phone: 702-651-5864

PROGRAM STUDENT LEARNING OUTCOME ACHIEVEMENT

Reporting Cohort

Total number of students used for determining and reporting achievement of program SLOs:

The total number of students used in this report is 30. The program decided to perform assessment based on laboratory discipline. Due to the small numbers in the MLT cohorts, multiple cohorts have been used in the assessment.

Program SLOs and Assessment Artifacts

List the program SLOs and report the data collected from the assessment artifacts to show achievement of SLOs.

1. Assess and correlate clinical and/or laboratory data through the application of theory and principles.
2. Perform and/or interpret laboratory calculations.
3. Select appropriate courses of action in accordance with established laboratory procedures.
4. Evaluate laboratory data to recognize, and report, clinically relevant results according to established procedures.

Assessment Artifacts & Measures

- Case studies: Adapted question matrix & rubrics
- Laboratory Reports: Checklists
- Practical Examinations & Quizzes: Adapted question matrix, checklists, and rubrics
- Clinical Practicum: Direct Observation Checklists

Numeric Performance Indicators

Assessment is based on a 4 point scale, 0-3, which indicates the following:

3: Exceeds Standard

2: Above Standard

1: Meets Standard

0: Does not meet standard

	PROGRAM OUTCOMES	Criterion	Rating	Ave. Rating
1	Assess medical laboratory results through the application of theory and principles; and correlation of other clinical or laboratory data in all clinical areas (**In Class Case Studies)**	After instruction, correctly applies theory and principles to assess and correlate clinical and laboratory data.	*Lecture Exam 5 Case Study* *Assigned Case Study Lab*	**2.3**
2	Performs laboratory calculations			
2a		Performs laboratory calculations	*Lab Exam 1: WBC & Plt count; Indices*	
2b		After instruction, correctly interprets data derived from laboratory calculations.	*Lab Exam 1:* *WBC & Platelet; Indices*	
	Average rating for Outcome 2			**2.8**
3	Selects appropriate courses of action in accordance with established laboratory procedures		*Clinical Affective: Accuracy*	
3a		After instruction, selects appropriate materials and samples for testing procedures.	*Clinical: Hem 1-1; 2-1/Coag 1-1; 2-1*	
3b		After instruction, processes and/or prepares controls	*Clinical: Hem 1-1/Coag 1-1*	

3c		After instruction, processes and/or prepares equipment/instruments	*Clinical: Hem 1-1/Coag 1-1*
3d		After instruction, processes and/or prepares reagents	*Clinical: Hem 1-1/Coag 1-1*
3e		After instruction, processes and/or prepares specimens	*Clinical: Hem 1-1/Coag 1-1*
3f		After instruction, performs clinical laboratory testing	*Lab Exam 1: Part 1 WBC & Differential* *Lab Exam 3: PTT* *Clinical: Hem 1-3/Coag 2-2*
	Average rating for Outcome 3		**2.8**
4	Evaluate laboratory data to recognize and report clinically relevant results according to established procedures.		*Clinical Affective: Accuracy*
4a		After instruction and given quality control and other related information, evaluate the acceptability of quality control data according to established procedures.	*Lab Exam 2: Sed Rate* *Lab Exam 3: PT* *Clinical: Hem 5-5*
4b		After instruction and given patient and other related information, discriminates between technical error and physiological abnormalities.	*Clinical: Heme 1-5/Coag 1-7*
4c		After instruction and given patient and other related information, takes corrective action according to established procedures.	*Clinical: Affective: Accuracy*
4d		After instruction and given patient and other related information, recognizes and reports normal and abnormal test results according to established procedures.	*Clinical: Heme 3-6/Coag 1-6; 2-7*

4e	After instruction and given patient and other related information, evaluates data to determine related disease states.	*Lecture Exam 4: EC 4/Lecture Exam 3 #18*	
Average rating for Outcome 4			**2.6**

Hematology Case Studies:

Lecture: Exam 5

Lab: Assigned Case Study

	PROGRAM OUTCOMES	**Criterion**	**Rating**	**Ave. Rating**
1	Assess medical laboratory results through the application of theory and principles; and correlation of other clinical or laboratory data in all clinical areas (**In Class Case Studies)** *CLS 271 Exam #2 (Staph, Strep, Neisseria, Hemophilus, GPB)* *CLS 271 Exam #4 (Chlamydia, Rickettsia, Spirochetes, Anaerobes)*	After instruction, correctly applies theory and principles to correctly interpret clinical, morphological, and test results to facilitate identification and discrimination of pathogens from normal microbiological colonization.		**2.7**
Average rating for Outcome 1				
2	Performs laboratory calculations			

2a	*CLS 272 – LR#14 (Kirby Bauer AST set up)*	After instruction, selects, calculates and prepares proper bacterial suspensions for identification and antibiotic sensitivity testing appropriate to each individual isolate.	
2b	*CLS 272 – LR#14 (Kirby Bauer AST interpretation)* *CLS 271 – Exam #5 (Antimicrobial Susceptibility Testing)*	After instruction, correctly interprets data derived from Antibiotic sensitivity/ mean inhibitory concentration data. Then correlates that data appropriate to microorganism identification and specimen source.	
	Average rating for Outcome 2		**2.8**
3	Selects appropriate courses of action in accordance with established laboratory procedures	*Clinical Affective: Accuracy*	
3a	*Clinical: 2-4,5; 3-2; 5-3; 6-1* *CLS 272 – Unknown #7 (Enterics)* *CLS 272 – Unknowns #1 and #2 (Staph, Strep, Neisseria, Hemophilus, GPB)*	After instruction, selects appropriate materials and testing procedures appropriate to organism under consideration in order to achieve proper identification.	
3b	*Clinical: 3-3* *CLS 272 – LR#3 (Gram Stain QC slide prep and interpretation)*	After instruction, selects, prepares and processes the prescribed quality control organisms appropriate to validate reagent system protocol.	
3c	*Clinical: 1-7; 8-9 Affective: Thoroughness* *CLS 272 LR#9 (Molecular Processes – Illumigene)*	After instruction, operates and/or prepares equipment/instruments and performs basic preventative maintenance procedures recording results in a regulatory accepted manner.	

3d	*Clinical: 5-4; 6-2; 7-2; 8-8* *CLS 272 – LR#13 (Non fermenters Rapid ID and biochems)*	After instruction, processes and/or prepares reagents utilized in basic microbiology testing.
3e	*Clinical: 1-2; 5-5; 7-1; 8-1* *CLS 272-Unknown #6 (BSC use and Blood Culture Set up)*	After instruction, processes and/or prepares specimens for testing
3f	*Clinical: 1-3;2-6; 3-4; 7-3; 8-2,4,6* *CLS 272-LR#16 (Vitek ID and Sensitivity for Enterics)*	After instruction, performs microbiological laboratory testing
	Average rating for Outcome 3	**2.9**
4	Evaluate laboratory data to recognize and report clinically relevant results according to established procedures.	*Clinical Affective: Accuracy*
4a	*CLS 272 – LR#17 (Influenza Rapid test method with QC)*	After instruction and given quality control and other related information, evaluate the acceptability of quality control data according to established procedures.
4b	*Clinical: 3-6; 5-2; 6-3,4* *CLS 272-Unknowns #3 and #4 (Enterics and Fecal Pathogens)* *CLS 272-Lab Practical #2 (Enterics, Fecal Pathogens, Nonfermenters, and Anaerobes)*	After instruction and given patient and other related information, discriminates between technical error and phenotypic variations.
4c		After instruction and given patient and other related information, takes corrective

	CLS 272-LR#15 (RPR Quality Assurance and patient worksheets)	action according to established procedures.
4d	*Clinical: 1-5; 2-2,3,7; 3-6,7; 4-3; 6-5,6; 8-3,5,7,10*	After instruction and given patient and other related information, recognize and report normal and abnormal test results according to established procedures.
	CLS 272 – Lab Practical #1 (Staph, Strep, Neisseria, Hemophilus, GPB)	
4e	*Clinical: 1-4;2-8*	After instruction and given patient and other related information, evaluate data to determine related disease states.
	CLS 272- Lab Practical #3 (Molecular processes, Fluorescent techniques, Parasitology, Mycology)	
	Average rating for Outcome 4	**2.8**

Performance criterion is based on performance rubric. Student achievement is scored in terms of exceeds standard (3); above standard (2); meets standard (1); does not meet standard (0).
Achieved SLO: Average score 2-3

Partially Achieved SLO: Average scores 1-2: **Not Achieved SLO:** Average score 0-1

Based on assessment data for this evaluation:

Outcome 1: Achieved: 87%

Partially Achieved: 13%

Outcome 2: Achieved: 98%

Partially Achieved: 2%

Outcome 3: Achieved: 100%

Outcome 4: Achieved: 97%

Partially Achieved: 3%

Meaning and Use of Findings

1. Describe your interpretation (meaning) of overall student performance and their achievement of outcomes.
   Evaluation of the above results, students performed above the standard for each of the programmatic outcomes. Faculty is satisfied with the results, and will continue to monitor.

2. Indicate how the assessment findings will be used to improve student success.
   Faculty will continue to monitor student achievement and alignment with national standards for the profession.

PREVIOUS ACTION PLAN FOR IMPROVEMENT

Report your 2016-2017 action plan activity results (review your 2016-2017 annual assessment report)

Restructure 3-year plan

Create plan in order to correlate didactic, clinical rotation, and certification board examination sub-section scores more efficiently.

Program has incorporated didactic and clinical rotation with this report. Program will add certification board examination sub-section scores moving forward.

Poster Project Improvements

Disseminate information to the students with focused and detailed instructions. Implemented earlier submission date in order to allow for corrections including grammatical, spelling, and formatting issues.

Project compliance has improved to 100%. Projects to be displayed in around the CLS laboratories in the WCH B building. Projects will also be displayed at pinning ceremonies.

COURSES REVIEWED DURING 2017-2018

For each course reviewed (indicated in your 3-year assessment plan): a) describe the review process, b) provide an overall summary pertaining to student learning outcome achievement, and c) discuss what course changes were made and how the changes will improve student success (e.g., revision of student learning outcomes, curriculum, assessment artifacts, etc.).

Hematology I (Includes CLS 291 & 292 & 296)

Review of data showed an average rating for this course as follows:

Outcome 1: 2.3 of 3

Outcome 2: 2.8 of 3

Outcome 3: 2.8 of 3

Outcome 4: 2.6 of 3

Data was compiled based on evaluation of case studies, practical examinations and associated quizzes. Checklists are used for direct observation of skills. Rubrics are used for evaluation of case study presentations and manual CBC practical exam.

Evaluation of the above results, students performed above the standard for each of the programmatic outcomes. Faculty is satisfied with the results, and will continue to monitor.

Review and revision of student learning outcomes to align with current curriculum content and assessment initiatives.

Microbiology I (Includes CLS 271 & 272 & 294)

Review of data showed an average rating for this course as follows:

Outcome 1: 2.7 of 3

Outcome 2: 2.8 of 3

Outcome 3: 2.9 of 3

Outcome 4: 2.8 of 3

Data was compiled based on evaluation of case studies, practical examinations and associated quizzes. Checklists are used for direct observation of skills. An adapted question matrix is used to determine questions for quizzes and examinations which covers basic to complex level questions.

Evaluation of the above results, students performed above the standard for each of the programmatic outcomes. Faculty is satisfied with the results, and will continue to monitor.

Review and revision of student learning outcomes to align with current curriculum content and assessment initiatives.

Action Plan for Improvement

1. Place an X in the appropriate boxes to identify any gaps or areas for improvement found during your assessment review.
2. Indicate planned activities to address the gaps or areas for improvement, the person(s) assigned tasks to complete the activities, the activity steps or process that needs to take place, and a target date for completion (you will report on these next cycle).

1. Assessment Review Findings:

Curriculum Content	Teaching Strategies	Curriculum Resources	Assessment Measure(s)	Learning Environment	Collaboration with Student

			Support Services
X	X	X	

2. Planned Activities	Person(s) Responsible	Action Steps	Target Date
Review and Revision of Course Outcomes	Patricia Armour Michael Simpson Shirley Cruzada Heidi Schneiter	Align student learning outcomes for the above courses as it relates to content and assessment initiatives.	May 2020
Pursue state-of-the-art instrumentation for CLS student laboratories	All program faculty and staff	Research equipment to enhance the student's laboratory experience to be prepared for clinical rotation and employment.	On-going
Include certification sub-sections in overall discipline assessment	All program faculty	Program Director to provide faculty annual data from certifying examination. Faculty to include in discipline assessment	May 2020 and forward

Mission, Student Success, & Institutional Effectiveness

Describe how the results of program outcomes assessment support CSN mission fulfillment, student success, and contributes to institutional effectiveness.

Program outcomes have been developed based on industry and certification standards. Assessment of program outcomes support the CSN mission as it shows student success in their personal, and professional, goals of pursuing a career in the Medical Laboratory field. Additionally, student success and institutional effectiveness are supported by graduation rates of 97% and placement rates of 100% for 2017-2018 as reported to the National Accrediting Agency for Clinical Laboratory Sciences.

Report and Disseminate Results

1. Indicate those internal and external stakeholders that need to know and should know your assessment results.
2. Describe any stakeholder feedback and the impact of that feedback to the program.

Internal stakeholders include College of Southern Nevada administration, School of Health Science leadership, and CSN faculty. External stakeholders include National Accrediting Agency for Clinical Laboratory Sciences and the Clinical Laboratory Sciences advisory board.

The program requests feedback from clinical rotation sites to keep the program current in methodology.

Review & Approval	Signature	Date
Program Director/Lead Faculty		
Heidi Schneiter		
Department Chair		
Jim Godin		
Academic Dean		
Janice Glasper		
Director, Office of Assessment		
Sharon Peterson		

College of Southern Nevada
ANNUAL ACADEMIC PROGRAM (Degree and/or Certificate)
STUDENT LEARNING OUTCOMES REPORTING FORM

Academic Year	2015-2016
Academic Program	AAS-Medical Laboratory Technician

Department: Dental Sciences, Diagnostic Evaluation and Rehabilitation Services
Date Report Completed: 11/18/16
Completed by: Heidi Schneiter
Contact Email: Heidi.schneiter@csn.edu
Contact Phone: 702-651-5864

Mission (Program Mission Strategies)
From your 3-year assessment plan, list the assessment strategies pursued during the current academic year to support the mission of your department, school and CSN.

The students must demonstrate their learned ability each semester to a certain competency level in order to stay in the limited entry program. Students are offered remediation opportunities during courses to help them succeed as well as remediation opportunities for those who are not successful so that they can re-apply to the program. Students must successfully pass clinical practicum courses as a final assessment of ability, demonstrating competence in each major clinical laboratory discipline, and program outcomes, in order to graduate.

Assessment strategies for the MLT Program include:

-Evaluation of clinical laboratory related case studies.
-Direct observation of skills in a clinical laboratory setting.
-Evaluation of performance on national certification examinations.

REPORT OF PREVIOUS ACADEMIC YEAR ACTION PLAN FOR IMPROVEMENT ACTIVITIES

1. List the planned activities from the previous action plan and provide a narrative report on the activity results.
2. Describe the direct impact to student learning and/or impact to institutional effectiveness/improvement.
3. Indicate any follow-up actions that are still needed for activities revised or not completed.
4. Indicate how the activity results have been shared and discussed (internally and externally) with program stakeholders.

1. List the planned activities from the previous action plan and provide a narrative report on the activity results.

There were no substantive changes to curriculum based on the previous assessment report.

A culminating poster project was added to the final clinical rotation in Summer 2016. Fifty percent of student projects aligned with the stated guidelines.

2. Describe the direct impact to student learning and/or impact to institutional effectiveness/improvement.

The intent of the poster project was to select a topic related to laboratory science that would be of interest to the general public. The poster was a tool for organization of data, visual images, and research about a topic in order to present a summary of learning.

3. Indicate any follow-up actions that are still needed for activities revised or not completed.

As this was the first year of implementation, the faculty have discussed the following changes to the activity in order to achieve higher performance:

- More detailed instructions
- More detailed grading rubric
- Peer-review

4. Indicate how the activity results have been shared and discussed (internally and externally) with program stakeholders.

- Results are shared at semi-annual CLS staff meetings
- Results are shared with advisory committee members

CURRENT ACADEMIC YEAR ASSESSMENT MEASURES	
Program Completion	
Total number of students enrolled in program on first day of the program for current AY	10
Total number of students completing program on day grades are due for last semester of current AY	10

Student Learning Outcomes

1. List each program SLO
2. The performance criterion that you use to determine achieved, partially achieved or not achieved
3. Report the percentage of students within the program that achieved, partially achieved or did not achieve each SLO
4. Attach evidence of how SLOs were assessed (summary reports, tables, graphs, charts, etc.)
5. Add additional lines for program SLO's as needed

Program SLOs	**Performance criterion (How will you determine achieved, partially achieved or not achieved?)**	**% Achieved SLO**	**% Partially Achieved SLO**	**% Not Achieved SLO**
Assess and correlate clinical and/or laboratory data through application of theory and principles.	Performance criterion is based on performance rubric. Student achievement is scored in terms of exceeds standard (3); above standard (2); meets standard (1); does not meet standard (0). **Achieved SLO:** Average score 2-3 **Partially Achieved SLO**: Average scores 1-2 **Not Achieved SLO:** Average score 0-1	95	5	0
Perform and/or interpret laboratory calculations.		100	0	0
Select appropriate courses of action in accordance with established laboratory procedures.		100	0	0
Evaluate laboratory data to recognize and report clinically relevant results according to established procedures.		100	0	0

Student Performance

Describe how students performed overall in the program. Indicate performance gaps and possible need for improvement.

Student performance overall is above average, with graduation rates, certification pass rates, and graduate employment, or continued education, above the benchmarks set by the National Accrediting Agency for Clinical Laboratory Sciences.

Assessment Measurement Tools

Describe the performance and usability of the direct and indirect assessment measurement tools. Indicate performance gaps and possible need for improvement.

Three-year assessment plan dictated review of program curriculum by semester. The program has found this is not an effective strategy. Future assessment plans will review program curriculum by discipline (i.e., Hematology, Microbiology, Clinical Chemistry, etc.) In this way, the correlation of didactic, clinical rotation, and certification board examination sub-section scores can be accomplished more efficiently.

Mission Alignment

Describe how the program assessment results support CSN institutional effectiveness. Indicate performance gaps and possible need for improvement

MLT program results for 2015-2016
89% of MLT program students graduated
100% of students challenging a national certification examination successfully passed
90% of graduates gained employment in the community or continued education

Program faculty will continue to monitor.

Course Review

Based on the courses indicated for review in the current AY cycle of your 3-year assessment plan, indicate all courses that were reviewed by course number and title. For each course provide an overall summary pertaining to achievement of student learning outcomes and discuss what curriculum components were reviewed (e.g., student learning outcomes, curriculum, assessment, etc.). Provide a concluding statement of how student performance in the course supported student achievement of program student learning outcomes. Indicate any performance gaps and possible need for improvement by course.

Immunology/Immunohematology I
CLS 251 Immunology/Immunohematology I/CLS 252 Applied Immunology/Immunohematology I
Review of data showed an average rating in the discipline of Immunology/Immunohematology I as follows:
Outcome 1: 2.9 of 3
Outcome 2: 2.7 of 3
Outcome 3: 2.9 of 3
Outcome 4: 2.8 of 3
Data was compiled based on in class case studies; direct observation in the student laboratory; and evaluation of antibody identification in the student laboratory.
Evaluation of the above results, students performed above the standard for each of the programmatic outcomes. Faculty is satisfied with the results, and will continue to monitor.

Hematology
CLS 291 Hematology I/ CLS 292 Applied Hematology I/CLS 296 Clinical Practicum III
Review of data showed an average rating in the discipline of Hematology as follows:
Outcome 1: 2.1 of 3
Outcome 2: 2.9 of 3
Outcome 3: 2.8 of 3
Outcome 4: 2.7 of 3
Data was compiled based on in class case studies; direct observation in the student laboratory and selected exam questions; and direct observation in the clinical practicum.
Evaluation of the above results, students performed above the standard for each of the programmatic outcomes. Faculty is satisfied with the results, and will continue to monitor.

CLS 294 Clinical Practicum I
Review of data showed an average rating in the discipline of Clinical Microbiology as follows:
Outcome 3: 2.9 of 3
Outcome 4: 2.9 of 3
Data was compiled based on direct observation in the clinical practicum.
Evaluation of the above results, students performed above the standard for each of the assessed programmatic outcomes. Faculty is satisfied with the results, and will continue to monitor.

CLS 295 Clinical Practicum II
Review of clinical notebook showed an average rating in the discipline of Clinical Chemistry as follows:
Outcome 3: 2.7 of 3
Outcome 4: 2.6 of 3
Data was compiled based on direct observation in the clinical practicum.
Review of the clinical notebook showed an average rating in the discipline of Urinalysis and Body Fluids as follows:
Outcome 3: 3 of 3
Outcome 4: 3 of 3
Data was compiled based on direct observation in the clinical practicum.
Evaluation of the above results, students performed above the standard for each of the assessed programmatic outcomes. Faculty is satisfied with the results, and will continue to monitor.

CLS 296 Clinical Practicum III
As stated above in the review of the discipline of Hematology, students performed above the standard in each programmatic outcome. Faculty is satisfied with the results, and will continue to monitor.

Action Plan for Improvement

3. Complete the Action Plan for Improvement to address the gaps or areas of improvement identified in your report.
4. Indicate planned activities, the purpose of the activity and how it addresses a strategy for improvement.
5. List the action steps needed and a target date where the activity will be evaluated for progress or completion results.

Planned Activity & Purpose	Strategy for Improvement	Action Steps	Target Date
Poster Project Improvements	☐ More detailed instructions ☐ More detailed grading rubric ☐ Peer-review	Disseminate information to the students with focused and detailed instructions. Implement peer-review to look for grammatical, spelling, formatting issues.	August 2017
Restructure 3-year plan	☐ Align CLS disciplines	Create plan in order to correlate didactic, clinical rotation, and certification board examination sub-section scores more efficiently.	Starting plan year 2016-2017

Report and Disseminate Results

3. Indicate those internal and external stakeholders that need to know and should know your assessment results.
4. Describe any stakeholder feedback and the impact of that feedback to the program.

Internal stakeholders include College of Southern Nevada administration, School of Health Science leadership, CSN faculty. External stakeholders include National Accrediting Agency for Clinical Laboratory Sciences and the Clinical Laboratory Sciences advisory board.
The program requests feedback from clinical rotation sites to keep the program current in methodology.

Review	Signature	Date
Program Director:		
Department Chair		
Academic Dean		
Director, Office of Assessment		

Frequency Tables MLT All

Q2. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Body Fluids

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	9.1	9.1	9.1
	Good	5	45.5	45.5	54.5
	Excellent	5	45.5	45.5	100.0
	Total	11	100.0	100.0	

Q3. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Microbiology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	2	18.2	18.2	18.2
	Good	2	18.2	18.2	36.4
	Excellent	7	63.6	63.6	100.0
	Total	11	100.0	100.0	

Q4. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Parasitology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	1	9.1	9.1	9.1
	Fair	4	36.4	36.4	45.5
	Good	1	9.1	9.1	54.5
	Excellent	3	27.3	27.3	81.8
	Not Applicable (N/A)	2	18.2	18.2	100.0
	Total	11	100.0	100.0	

Q5. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Mycology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	2	18.2	18.2	18.2
	Fair	3	27.3	27.3	45.5
	Good	1	9.1	9.1	54.5
	Excellent	3	27.3	27.3	81.8
	Not Applicable (N/A)	2	18.2	18.2	100.0
	Total	11	100.0	100.0	

Q6. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Virology

		Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Fair	4	36.4	36.4	36.4
	Good	1	9.1	9.1	45.5
	Excellent	4	36.4	36.4	81.8
	Not Applicable (N/A)	2	18.2	18.2	100.0
	Total	11	100.0	100.0	

Q7. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Clinical Chemistry

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	9.1	9.1	9.1
	Good	5	45.5	45.5	54.5
	Excellent	5	45.5	45.5	100.0
	Total	11	100.0	100.0	

Q8. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Hematology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	3	27.3	27.3	27.3
	Good	2	18.2	18.2	45.5
	Excellent	6	54.5	54.5	100.0
	Total	11	100.0	100.0	

Q9. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Immunohematology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	2	18.2	18.2	18.2
	Good	4	36.4	36.4	54.5
	Excellent	5	45.5	45.5	100.0
	Total	11	100.0	100.0	

Q10. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Serology/immunology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	2	18.2	18.2	18.2
	Good	4	36.4	36.4	54.5
	Excellent	5	45.5	45.5	100.0
	Total	11	100.0	100.0	

Q11. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Molecular Diagnostics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	9.1	9.1	9.1
	Good	6	54.5	54.5	63.6
	Excellent	2	18.2	18.2	81.8
	Not Applicable (N/A)	2	18.2	18.2	100.0
	Total	11	100.0	100.0	

Q12. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Phlebotomy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	9.1	9.1	9.1
	Good	1	9.1	9.1	18.2
	Excellent	7	63.6	63.6	81.8
	Not Applicable (N/A)	2	18.2	18.2	100.0
	Total	11	100.0	100.0	

Q14. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Body Fluids

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	3	27.3	33.3	33.3
	Excellent	6	54.5	66.7	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

Q15. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Microbiology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	9.1	11.1	11.1
	Good	3	27.3	33.3	44.4
	Excellent	5	45.5	55.6	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

Q16. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Parasitology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	1	9.1	11.1	11.1
	Fair	3	27.3	33.3	44.4
	Good	2	18.2	22.2	66.7
	Excellent	2	18.2	22.2	88.9
	Not Applicable (N/A)	1	9.1	11.1	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

Q17. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Mycology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	1	9.1	11.1	11.1
	Fair	3	27.3	33.3	44.4
	Good	2	18.2	22.2	66.7
	Excellent	2	18.2	22.2	88.9
	Not Applicable (N/A)	1	9.1	11.1	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

Q18. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Virology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	1	9.1	11.1	11.1
	Fair	2	18.2	22.2	33.3
	Good	3	27.3	33.3	66.7
	Excellent	2	18.2	22.2	88.9
	Not Applicable (N/A)	1	9.1	11.1	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

Q19. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Clinical Chemistry

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	3	27.3	33.3	33.3
	Excellent	6	54.5	66.7	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

Q20. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Hematology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	3	27.3	33.3	33.3
	Excellent	6	54.5	66.7	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

Q21. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Immunohematology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	9.1	11.1	11.1
	Good	3	27.3	33.3	44.4
	Excellent	5	45.5	55.6	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

Q22. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Serology/immunology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	9.1	11.1	11.1
	Good	2	18.2	22.2	33.3
	Excellent	6	54.5	66.7	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

Q23. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Molecular Diagnostics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	2	18.2	22.2	22.2
	Good	4	36.4	44.4	66.7
	Excellent	1	9.1	11.1	77.8
	Not Applicable (N/A)	2	18.2	22.2	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

Q24. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Phlebotomy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	9.1	11.1	11.1
	Excellent	6	54.5	66.7	77.8
	Not Applicable (N/A)	2	18.2	22.2	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

Q26. Please rate student knowledge in each of the following areas. - Ability to assess factors which may affect patient results

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	3	27.3	37.5	37.5
	Excellent	5	45.5	62.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q27. Please rate student knowledge in each of the following areas. - Understanding of the principles of new techniques and procedures

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	9.1	12.5	12.5
	Excellent	7	63.6	87.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q28. Please rate student knowledge in each of the following areas. - Awareness of safety and health hazards and ability to take appropriate precautions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	9.1	12.5	12.5
	Excellent	7	63.6	87.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q29. Please rate student knowledge in each of the following areas. - Ability to collect and process biological specimens for analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	9.1	12.5	12.5
	Excellent	7	63.6	87.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q30. Please rate student knowledge in each of the following areas. - Ability to perform preventive maintenance on equipment and instruments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	9.1	12.5	12.5
	Excellent	7	63.6	87.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q31. Please rate student knowledge in each of the following areas. - Understanding of numerical data and ability to perform calculations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	9.1	12.5	12.5
	Good	4	36.4	50.0	62.5
	Excellent	3	27.3	37.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q32. Please rate student knowledge in each of the following areas. - Ability to monitor quality control within predetermined limits and take appropriate action as necessary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	9.1	12.5	12.5
	Excellent	7	63.6	87.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q33. Please rate student knowledge in each of the following areas. - Ability to communicate with patients and other healthcare professionals

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	87.5	87.5
	Not Applicable (N/A)	1	9.1	12.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q34. Please rate student knowledge in each of the following areas. - Ability to think critically, solve problems and make decisions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	9.1	14.3	14.3
	Excellent	6	54.5	85.7	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q35. Please rate student knowledge in each of the following areas. - Ability to locate and use information

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	100.0	100.0
Missing	System	4	36.4		
Total		11	100.0		

Q36. Please rate student knowledge in each of the following areas. - Ability to use computers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	8	72.7	100.0	100.0
Missing	System	3	27.3		
Total		11	100.0		

Q37. Please rate student knowledge in each of the following areas. - Ability to organize daily workload

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	8	72.7	100.0	100.0
Missing	System	3	27.3		
Total		11	100.0		

Q38. Please rate student knowledge in each of the following areas. - Understanding of role and responsibility of laboratory personnel

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	100.0	100.0
Missing	System	4	36.4		
Total		11	100.0		

Q39. Please rate student knowledge in each of the following areas. - Commitment to maintaining professional competency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	8	72.7	100.0	100.0
Missing	System	3	27.3		
Total		11	100.0		

Q40. Please rate student knowledge in each of the following areas. - Commitment to ethical, legal, and professional behavior

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	8	72.7	100.0	100.0
Missing	System	3	27.3		
Total		11	100.0		

Q42. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Adequacy of information in college catalog

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	87.5	87.5
	Good	1	9.1	12.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q43. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Limited Entry admissions process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	6	54.5	75.0	75.0
	Good	2	18.2	25.0	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q44. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Orientation to program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	87.5	87.5
	Good	1	9.1	12.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q45. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Quality of classroom instruction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	8	72.7	100.0	100.0
Missing	System	3	27.3		
Total		11	100.0		

Q46. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Relevance of course content

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	87.5	87.5
	Good	1	9.1	12.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q47. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Availability of appropriate equipment (i.e., audio-visual)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	5	45.5	71.4	71.4
	Good	1	9.1	14.3	85.7
	Fair	1	9.1	14.3	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q48. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Quality of laboratory instruction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	87.5	87.5
	Good	1	9.1	12.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q49. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Availability of adequate supplies and instrumentation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	5	45.5	62.5	62.5
	Good	1	9.1	12.5	75.0

	Fair	2	18.2	25.0	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q50. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Adequacy of simulated laboratory activities in preparation for clinical competence

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	87.5	87.5
	Good	1	9.1	12.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q51. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Selection of appropriate textbooks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	87.5	87.5
	Good	1	9.1	12.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q52. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Fairness of faculty grading processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	8	72.7	100.0	100.0
Missing	System	3	27.3		
Total		11	100.0		

Q53. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Accessibility of faculty during posted office hours

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	8	72.7	100.0	100.0
Missing	System	3	27.3		
Total		11	100.0		

Q54. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Academic advisement and assistance with course selection

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	87.5	87.5
	Good	1	9.1	12.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		

Total		11	100.0		

Q55. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Faculty interest in and availability to students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	87.5	87.5
	Good	1	9.1	12.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q56. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Library collections and services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	87.5	87.5
	N/A	1	9.1	12.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q57. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Computer resources

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	87.5	87.5
	N/A	1	9.1	12.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

Q58. Comments on areas of Program Resources.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	1	9.1	100.0	100.0
Missing	System	10	90.9		
Total		11	100.0		

Q58_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		10	90.9	90.9	90.9
	There were times we didn't have reagents that we're needed.	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Q59. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Olympus AU 400e

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	6	54.5	85.7	85.7
	Good	1	9.1	14.3	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q60. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Coulter Brand ACT Diff 2 Hematology Analyzer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	6	54.5	85.7	85.7
	Good	1	9.1	14.3	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q61. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - AcroSpray Hematology Stainer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	5	45.5	71.4	71.4
	Good	2	18.2	28.6	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q62. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Centra-W Cell Washer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	6	54.5	85.7	85.7
	Good	1	9.1	14.3	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q63. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Ortho Gel System

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	5	45.5	71.4	71.4
	Good	1	9.1	14.3	85.7
	N/A	1	9.1	14.3	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q64. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - i-Stat Analyzer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	100.0	100.0
Missing	System	4	36.4		
Total		11	100.0		

Q65. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Meiji Polarizing Light Microscope

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	100.0	100.0
Missing	System	4	36.4		
Total		11	100.0		

Q66. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Swift Microscope

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	6	54.5	85.7	85.7
	Good	1	9.1	14.3	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q67. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Vitek II

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	6	54.5	85.7	85.7
	Good	1	9.1	14.3	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q68. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - BacTAlert System

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	5	45.5	71.4	71.4
	Good	1	9.1	14.3	85.7
	N/A	1	9.1	14.3	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q69. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Siemens CA - 530

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	100.0	100.0
Missing	System	4	36.4		
Total		11	100.0		

Q70. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Siemens PFA - 100

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	100.0	100.0
Missing	System	4	36.4		
Total		11	100.0		

Q71. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Clinitek Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	100.0	100.0
Missing	System	4	36.4		

Total		11	100.0		

Q73. Section III - Clinical Affiliate Instruction Please comment on each of the following aspects of your clinical practicum experience: - Quality of clinical facilities used for training

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	5	45.5	71.4	71.4
	Good	2	18.2	28.6	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q74. Section III - Clinical Affiliate Instruction Please comment on each of the following aspects of your clinical practicum experience: - Quality of instruction at clinical affiliate site

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	6	54.5	100.0	100.0
Missing	System	5	45.5		
Total		11	100.0		

Q75. Section III - Clinical Affiliate Instruction Please comment on each of the following aspects of your clinical practicum experience: - Allocation of adequate practicum time in each clinical area

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	6	54.5	85.7	85.7
	Fair	1	9.1	14.3	100.0
	Total	7	63.6	100.0	

Missing	System	4	36.4		
Total		11	100.0		

Q76. Section III - Clinical Affiliate Instruction Please comment on each of the following aspects of your clinical practicum experience: - Orientation to safety and infection control procedures

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	100.0	100.0
Missing	System	4	36.4		
Total		11	100.0		

Q77. Section III - Clinical Affiliate Instruction Please comment on each of the following aspects of your clinical practicum experience: - Orientation to testing procedures

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	100.0	100.0
Missing	System	4	36.4		
Total		11	100.0		

Q78. Section III - Clinical Affiliate Instruction Please comment on each of the following aspects of your clinical practicum experience: - Adequate hands-on experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	100.0	100.0

Missing	System	4	36.4		
Total		11	100.0		

Q79. Section III - Clinical Affiliate Instruction Please comment on each of the following aspects of your clinical practicum experience: - Fairness of grading practices of clinical instructors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	100.0	100.0
Missing	System	4	36.4		
Total		11	100.0		

Q81. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Initial college information and registration assistance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	3	27.3	42.9	42.9
	Good	2	18.2	28.6	71.4
	Fair	2	18.2	28.6	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q82. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Services provided by financial aid office

		Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Excellent	1	9.1	14.3	14.3
	Good	2	18.2	28.6	42.9
	Fair	1	9.1	14.3	57.1
	Poor	1	9.1	14.3	71.4
	N/A	2	18.2	28.6	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q83. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Services provided by admissions and records office

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	3	27.3	42.9	42.9
	Good	3	27.3	42.9	85.7
	Fair	1	9.1	14.3	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q84. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Grade reporting and transcript processing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	5	45.5	71.4	71.4
	Good	1	9.1	14.3	85.7

	Fair	1	9.1	14.3	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q85. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Counseling services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	36.4	57.1	57.1
	Good	1	9.1	14.3	71.4
	Fair	1	9.1	14.3	85.7
	N/A	1	9.1	14.3	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q86. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Career development and job preparation services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	36.4	57.1	57.1
	Good	1	9.1	14.3	71.4
	Fair	1	9.1	14.3	85.7
	N/A	1	9.1	14.3	100.0
	Total	7	63.6	100.0	

Missing	System	4	36.4		
Total		11	100.0		

Q87. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Maintenance of buildings and grounds

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	36.4	57.1	57.1
	Good	3	27.3	42.9	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q88. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Parking facilities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	6	54.5	85.7	85.7
	Good	1	9.1	14.3	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q89. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Campus security

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	6	54.5	85.7	85.7
	Good	1	9.1	14.3	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q90. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - College bookstore

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	5	45.5	71.4	71.4
	Good	1	9.1	14.3	85.7
	Poor	1	9.1	14.3	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q91. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Instructional facilities and equipment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	5	45.5	71.4	71.4
	Good	2	18.2	28.6	100.0
	Total	7	63.6	100.0	

Missing	System	4	36.4		
Total		11	100.0		

Q92. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Library collections and services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	6	54.5	85.7	85.7
	Good	1	9.1	14.3	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Q93. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Computer resources

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	7	63.6	100.0	100.0
Missing	System	4	36.4		
Total		11	100.0		

Q94. Comments on College Resources:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	18.2	100.0	100.0
Missing	System	9	81.8		
Total		11	100.0		

Q94_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		9	81.8	81.8	81.8
	college bookstore very expensive for a college student who is not on financial aid	1	9.1	9.1	90.9
	The personnel for registration/admissions/financial aid seem like they're unhappy in their job.	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Q95. Which one of the following statements best describes your employment status?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed	5	45.5	71.4	71.4
	Continuing my education at college or university	1	9.1	14.3	85.7
	Unemployed, seeking employment	1	9.1	14.3	100.0
	Total	7	63.6	100.0	

Missing	System	4	36.4		
Total		11	100.0		

Q96_5:Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Other	1	9.1	100.0	100.0
Missing	System	10	90.9		
Total		11	100.0		

Q96_5OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		10	90.9	90.9	90.9
	Taking certification exam	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Q97. If employed, which best describes your facility?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Medical Laboratory	4	36.4	80.0	80.0
	Non-laboratory related	1	9.1	20.0	100.0
	Total	5	45.5	100.0	

Missing	System	6	54.5		
Total		11	100.0		

Q98. If employed, indicate your employment status.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Full-time	4	36.4	80.0	80.0
	Part-time	1	9.1	20.0	100.0
	Total	5	45.5	100.0	
Missing	System	6	54.5		
Total		11	100.0		

Q99_1:Job Title

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Job Title	5	45.5	100.0	100.0
Missing	System	6	54.5		
Total		11	100.0		

Q99_2:Brief description of your duties

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Brief description of your duties	3	27.3	100.0	100.0
Missing	System	8	72.7		
Total		11	100.0		

Q99_3:Name of employer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Name of employer	5	45.5	100.0	100.0
Missing	System	6	54.5		
Total		11	100.0		

Q99_4:Street Address

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Street Address	5	45.5	100.0	100.0
Missing	System	6	54.5		
Total		11	100.0		

Q99_5:City

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	City	5	45.5	100.0	100.0
Missing	System	6	54.5		
Total		11	100.0		

Q99_6:State

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	State	5	45.5	100.0	100.0
Missing	System	6	54.5		
Total		11	100.0		

Q99_7:Zip

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Zip	5	45.5	100.0	100.0
Missing	System	6	54.5		
Total		11	100.0		

Q99_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		6	54.5	54.5	54.5
	Clinical Laboratory Technologist	1	9.1	9.1	63.6
	Equipment technician	1	9.1	9.1	72.7
	Lead Phlebotomist	1	9.1	9.1	81.8

	Medical Technologist-generalist	1	9.1	9.1	90.9
	MLT	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Q99_2OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		8	72.7	72.7	72.7
	Clinical lab	1	9.1	9.1	81.8
	Maintenance, tracking, cleanliness of equipment distributed in hospital	1	9.1	9.1	90.9
	Microbiology Department	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Q99_3OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		6	54.5	54.5	54.5
	Aramark	1	9.1	9.1	63.6
	Centennial Hills Hospital Medical Center	1	9.1	9.1	72.7
	University Medical Center	1	9.1	9.1	81.8
	Valley Health System	1	9.1	9.1	90.9
	Valley healthcare system	1	9.1	9.1	100.0

	Total	11	100.0	100.0	

Q99_4OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		6	54.5	54.5	54.5
	1800 w charleston	1	9.1	9.1	63.6
	1800 West Charleston Boulevard	1	9.1	9.1	72.7
	601 shadow lane	1	9.1	9.1	81.8
	6900 n Durango dr	1	9.1	9.1	90.9
	701s tonopah dr	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Q99_5OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		6	54.5	54.5	54.5
	Las vegas	1	9.1	9.1	63.6
	Las Vegas	4	36.4	36.4	100.0
	Total	11	100.0	100.0	

Q99_6OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		6	54.5	54.5	54.5
	Nevada	3	27.3	27.3	81.8
	Nv	1	9.1	9.1	90.9
	NV	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Q99_7OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		6	54.5	54.5	54.5
	89102	2	18.2	18.2	72.7
	89106	2	18.2	18.2	90.9
	89149	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Q100. AT which college or university are you enrolled?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	1	9.1	100.0	100.0
Missing	System	10	90.9		
Total		11	100.0		

Q100_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		10	90.9	90.9	90.9
	College of Southern Nevada	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Q101. Is your continuing education related to clinical laboratory science?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	9.1	100.0	100.0
Missing	System	10	90.9		
Total		11	100.0		

Q101_3OT

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	11	100.0	100.0	100.0

Q102. Section VI - Program Evaluation Please comment on the overall effectiveness of the CLS Program in helping you to attain your personal and professional goals. What are the program strengths?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	6	54.5	100.0	100.0
Missing	System	5	45.5		
Total		11	100.0		

Q102_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		5	45.5	45.5	45.5
	Hands on learn and professors readiness for questions	1	9.1	9.1	54.5
	Instructors take the time to help you with understanding what ever you need help with....	1	9.1	9.1	63.6
	Instructors very helpful will all the questions regarding the program and applying for state license.	1	9.1	9.1	72.7
	Labs, powerpoints, teachers	1	9.1	9.1	81.8
	The laboratory portions of the program are a great chance to put into practice the material taught in class	1	9.1	9.1	90.9
	The professors	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Q103. What are the program weaknesses?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	5	45.5	100.0	100.0
Missing	System	6	54.5		
Total		11	100.0		

Q103_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		6	54.5	54.5	54.5
	I really wish the school would have enough grant or money to fund this program and not just focus on other departments such as NURSING!!	1	9.1	9.1	63.6
	Only once a year selection	1	9.1	9.1	72.7
	The length of time it takes to get reagents and size of classroom (too small)	1	9.1	9.1	81.8
	There aren't things put into place to help with learning such as assigned reading, question at the end of power points, homework	1	9.1	9.1	90.9
	was Ramon but that has been fixed	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Q104. What specific improvements would you recommend?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	6	54.5	100.0	100.0
Missing	System	5	45.5		
Total		11	100.0		

Q104_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		5	45.5	45.5	45.5
	Bigger classrooms	1	9.1	9.1	54.5
	Having a review course of all subjects, to refresh subjects that weren't as recent.	1	9.1	9.1	63.6
	Implementing iclickers into lecture to help keep student attention but also to drive home points.	1	9.1	9.1	72.7
	More resources for learning as far as equipment and tools	1	9.1	9.1	81.8
	No more budget cuts on this program. more updated machines and tools.	1	9.1	9.1	90.9

	Would love longer dedicated lab/simulation time. For example, the full process of receiving a patient sample, figuring out what tests are needed, etc. Also, maybe midterms to gauge student progress and more focus on individual student improvemen...	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Q105. In what ways were the program faculty helpful?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	6	54.5	100.0	100.0
Missing	System	5	45.5		
Total		11	100.0		

Q105_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		5	45.5	45.5	45.5
	Accessibility and flexibility	1	9.1	9.1	54.5
	Always being available if there were any questions or concerns	1	9.1	9.1	63.6
	Everything.	1	9.1	9.1	72.7

	Extremely helpful, always willing to answer our questions, and took time outside class hours to help whenever needed	1	9.1	9.1	81.8
	Office hours and lab time were used to address questions	1	9.1	9.1	90.9
	They were always willing to answer questions both school and professional	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Q106. How well did the program prepare you for board certification?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	5	45.5	100.0	100.0
Missing	System	6	54.5		
Total		11	100.0		

Q106_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		6	54.5	54.5	54.5
	Did an awesome job. Got what I needed for the board exam.	1	9.1	9.1	63.6
	Good	1	9.1	9.1	72.7
	N/A	1	9.1	9.1	81.8

	Talked about dead techniques or things that were still asked on the exam but weren't done regularly anymore	1	9.1	9.1	90.9
	They did very well, need more self study on my part	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Q107. In what ways will your CLS education help you to achieve future goals?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	6	54.5	100.0	100.0
Missing	System	5	45.5		
Total		11	100.0		

Q107_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		5	45.5	45.5	45.5

Clinical rotations, besides classroom time, is the biggest tool for preparing the student for work in the field. This is the chance to apply what we learned in the semester to the workplace.	1	9.1	9.1	54.5
CLS education already achieved my goal. Got a job in Microbiology department and loving it.	1	9.1	9.1	63.6
finally be a career field that I will actually like	1	9.1	9.1	72.7
It will open up advancement opportunities.	1	9.1	9.1	81.8
Prepared me for laboratory work	1	9.1	9.1	90.9
Well it's what I want to do. So by doing it I have achieved my dream. Maybe now it will help push me to keep aiming for higher degrees	1	9.1	9.1	100.0
Total	11	100.0	100.0	

No. of respondents: 1 from 2014, 3 from 2015, 2 from 2016, and 5 from 2017 for **a total of 11**

Q # 2 Sec I Professional Preparation:

On the question of "Understanding of issues" on the core areas, the following "excellent" ratings were obtained for Microbiology - 7 of 11 or 63.7%; Hematology – 6 of 11 or 54.5%; and Chemistry and Immunohematology – 5 of 11 or 45.5%.

On the question of "Ability to perform technical procedures, the following "excellent" ratings were obtained for Microbiology and Immunohematology - 5 of 9 or 55.5%; and for Chemistry and Hematology – 6 of 9 or 66.6%.

Question # 45 Sec II Program Resources, Please comment on each of the following aspects of your MLT education experience:

a) Quality of classroom instruction – rated "excellent" by 8 of 8 (100%)
b) Relevance of course content – rated "excellent" by 7 of 8 (87.5%)
c) Availability of appropriate instrument, equipment (i.e., audiovisual), and adequate supplies – rated "excellent" by 5 of 8 (62.5%)

Q # 73 III Clinical Affiliate Instruction

7 of 7 (100%) responded "excellent" to the following: a) Orientation to safety and infection control procedure, and testing procedures; b) Adequate hands on experience; and c) Fairness of grading practices of clinical instructors. 6 of 7 (85.7%) for d) Allocation of adequate practice time in each clinical area; and 5 of 7 (71.4%) for e) Quality of instruction at clinical site.

Q # 82 IV College Resources

Excellent ratings were given to the following: a) Computer resources at 7 of 7 (100%); b) Parking facilities, c) Campus security, d) Library collections & services at 6 of 7 (85%) each; and e) Instructional facilitates and equipment at 5 of 7 (71.4%).

Q # 95 Employment Status

5 of 7 (71.4%) responded "employed full time" with 4 of them working in a medical laboratory (80%) and 1 in a non-laboratory related facility (20%). 1 of 7 (14.3%) said continuing college /university education; and the remaining 1 of 7 (14.3%) responded "seeking employment".

Q # 102 Sec VI Program Evaluation – Strengths of the CLS program

Responses given were: a) Hands on learning and professors' readiness to answer questions; b) Instructors take the time to help you in whatever you need help with; c) Very helpful with all questions regarding the program and applying for state license; d) Laboratory activities, power point presentations, teachers; d) The laboratory portions of the program are a great chance to put into practice the materials taught in class; and e) The professors.

Q # 103 Program weaknesses

Responses given were: a) Need for enough grant to fund this program; b) Only once a year selection; c) Length of time to get reagents; d) Small size of classrooms; and e) Not enough assigned readings, homework, and questions at the end of lecture PowerPoints.

Q # 104 What specific improvements would you recommend?

Responses given were: a) Bigger classrooms; b) Review courses of all subjects; c) Use of clickers in lectures to help keep student attention and drive home points; d) More updated learning equipment and tools; e) Longer laboratory/simulation time; and f) More focus on individual student's improvement.

Q # 105 In what ways were the program faculty helpful?

Responses given were: a) Accessibility and flexibility; b) Availability for questions/concerns; c) Everything; d) Extremely helpful, willingness to answer questions; e) Took time outside classroom hours to help whenever needed; and f) Use of office hours and laboratory time to address questions and concerns.

Q # 106 How well did the program prepare you for the board certification?

Answers given were: a) Did an awesome job, got what I needed for the board exam; b) Good; c) N/A ; d) Talked about old tests/techniques that are no longer done regularly but are still asked in the exam.; e) They did very well, just more self-study on my part.

Q # 107 In what ways will your CLS education help you to achieve future goals?

Answers given: a) Clinical rotations, in addition to classroom time prepare the students for work in the field; b) Prepared me to achieve my goal. Got a job in Microbiology department and loving it; c) Prepared me to work in the field that I like; and d) Advancement opportunities in laboratory work and future/higher degrees.

MLS / MLT Programs Employer Survey

Description:
Date Created: 7/12/2016 4:47:35 PM
Date Range: 7/12/2016 4:46:00 PM - 8/26/2016 4:46:00 PM
Total Respondents: 5

Q1. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Body Fluids

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
0	0.00%		Excellent
2	50.00%		Not Applicable (N/A)
4	Respondents		

Q2. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Microbiology

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair

3	60.00%	Good
1	20.00%	Excellent
1	20.00%	Not Applicable (N/A)
5	Respondents	

Q3. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Parasitology

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
1	25.00%		Good
0	0.00%		Excellent
3	75.00%		Not Applicable (N/A)
4	Respondents		

Q4. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Mycology

Count	Percent		
0	0.00%		Poor

0	0.00%		Fair
1	25.00%		Good
0	0.00%		Excellent
3	75.00%		Not Applicable (N/A)
4	Respondents		

Q5. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Virology

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
0	0.00%		Excellent
2	50.00%		Not Applicable (N/A)

4	Respondents		

Q6. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Clinical Chemistry

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
1	25.00%		Excellent
1	25.00%		Not Applicable (N/A)
4	Respondents		

Q7. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Hematology

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
1	25.00%		Excellent
1	25.00%		Not Applicable (N/A)

4	Respondents

Q8. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Immunohematology

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
2	50.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q9. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Serology/immunology

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good

1	25.00%	Excellent
1	25.00%	Not Applicable (N/A)
4	Respondents	

Q10. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Phlebotomy

Count	Percent	
0	0.00%	Poor
0	0.00%	Fair
1	25.00%	Good
1	25.00%	Excellent
2	50.00%	Not Applicable (N/A)
4	Respondents	

Q11. Please use this space for any additional comments regarding student knowledge.

Count	Percent	
1	100.00%	

Count	Percent	
1	100.00%	Came prepared to learn.

1 Respondents

Q12. Please rate student knowledge in each of the following areas. - Ability to assess factors which may affect patient results

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
2	50.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q13. Please rate student knowledge in each of the following areas. - Understanding of the principles of new techniques and procedures

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
2	50.00%		Excellent

0	0.00%		Not Applicable (N/A)
4	Respondents		

Q14. Please rate student knowledge in each of the following areas. - Awareness of safety and health hazards and ability to take appropriate precautions

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
1	33.33%		Good
2	66.67%		Excellent
0	0.00%		Not Applicable (N/A)
3	Respondents		

Q15. Please rate student knowledge in each of the following areas. - Ability to collect and process biological specimens for analysis

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair

1	25.00%	Good
1	25.00%	Excellent
2	50.00%	Not Applicable (N/A)
4	Respondents	

Q16. Please rate student knowledge in each of the following areas. - Ability to perform preventive maintenance on equipment and instruments

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
3	75.00%		Good
1	25.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q17. Please rate student knowledge in each of the following areas. - Understanding of numerical data and ability to perform calculations

Count	Percent		
0	0.00%		Poor

0	0.00%		Fair
2	50.00%		Good
1	25.00%		Excellent
1	25.00%		Not Applicable (N/A)
4	Respondents		

Q18. Please rate student knowledge in each of the following areas. - Ability to monitor quality control within predetermined limits and take appropriate action as necessary

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
2	50.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q19. Please rate student knowledge in each of the following areas. - Ability to communicate with patients and other healthcare professionals

Count	Percent		

0	0.00%		Poor
0	0.00%		Fair
1	25.00%		Good
1	25.00%		Excellent
2	50.00%		Not Applicable (N/A)
4	Respondents		

Q20. Please rate student knowledge in each of the following areas. - Ability to think critically, solve problems and make decisions

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
3	75.00%		Good
1	25.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q21. Please rate student knowledge in each of the following areas. - Ability to locate and use information		
Count	Percent	
0	0.00%	Poor
0	0.00%	Fair
2	50.00%	Good
2	50.00%	Excellent
0	0.00%	Not Applicable (N/A)
4	Respondents	

Q22. Please rate student knowledge in each of the following areas. - Ability to use computers		
Count	Percent	
0	0.00%	Poor
0	0.00%	Fair
2	50.00%	Good

2	50.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q23. Please rate student knowledge in each of the following areas. - Ability to organize daily workload

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
3	75.00%		Good
1	25.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q24. Please rate student knowledge in each of the following areas. - Understanding of role and responsibility of laboratory personnel

Count	Percent		
0	0.00%		Poor

0	0.00%		Fair
2	50.00%		Good
2	50.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q25. Please rate student knowledge in each of the following areas. - Commitment to maintaining professional competency

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
2	50.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q26. Please rate student knowledge in each of the following areas. - Commitment to ethical, legal, and professional behavior

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
2	50.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q27. Please use this space for any additional comments regarding the above technical procedures.

Count	Percent
0	0.00%

Count	Percent
0	Respondents

Q28. Section II - Employer Information Please answer the following questions pertaining to your facility. Does your facility currently employ a CSN MLS / MLT Program graduate?

Count	Percent

3	75.00%		Yes
1	25.00%		No
4	Respondents		

Q29. How many does your facility curre itly employ?

Count	Percent	
3	100.00%	

Count	Percent	
2	66.67%	1
1	33.33%	2
3	Respondents	

Q30. In what job capacity/clinical area do they perform?

Count	Percent	
3	100.00%	

Count	Percent	
1	33.33%	Hematology
1	33.33%	Med Technologist
1	33.33%	Microbiology
3	Respondents	

Q31. Would you consider hiring a CSN MLS / MLT Program graduate in the future?

Count	Percent

1	100.00%		Yes
0	0.00%		No, why not

Count	Percent
1	Respondents

Q32. How important are Phlebotomy skills in your consideration of an MLS / MLT for employment?

Count	Percent		
0	0.00%		Very Important
1	25.00%		Somewhat important
3	75.00%		Not Important
0	0.00%		Phlebotomy is not performed at my facility
4	Respondents		

Q33. How would you rate CSN MLS / MLT Program graduates in comparison to other MLSs / MLTs employed at your facility?

Count	Percent		
0	0.00%		Superior

4	100.00%		Comparable
0	0.00%		Inferior
0	0.00%		Do not employ MLSs / MLTs at my facility
4	Respondents		

Q34. Which of the following best characterizes your facility?

Count	Percent		
2	50.00%		Hospital < 500 beds
0	0.00%		Hospital > 500 beds
1	25.00%		Private Laboratory
0	0.00%		Physicians Office
0	0.00%		Outpatient clinic
1	25.00%		Other

Count	Percent

1	25.00%	The students are passionate about the profession and are eager to learn.
1	25.00%	Well rounded knowledge on the theoretical side of the medical laboratory science.

4 Respondents

1	100.00%	Reference Laboratory

4 Respondents

Q35. Section III - Program Evaluation Please comment on the overall effectiveness of the CSN MLS / MLT Programs in helping prepare Medical Laboratory Scientists /Technicians to function competently in the clinical setting. What strengths do our students possess?

Count	Percent
4	100.00%

Count	Percent	
1	25.00%	Able to use LIS easily, eager to learn
1	25.00%	Good understanding in all sections.

Q36. What are your perceived weaknesses of our students?

Count	Percent
3	100.00%

Count	Percent	
1	33.33%	Instrument trouble shooting
1	33.33%	There can be a lot of idle chatter at times.
1	33.33%	Trouble shooting instruments is a common weakness not just with students fresh out of school but with techs that have never encountered a specific instrument. It is a skill that comes with time and more exposure to the nuances of each intrument.

3 Respondents

Count	Percent	
1	50.00%	Open communication with contacts in the hospitals and labs would ensure that the facility could accomodate student/s at the best possible time/schedule to maximize the learning experience of the student/s.

2 Respondents

Q37. What specific recommendations could you make to improve student performance?

Count	Percent
1	100.00%

Count	Percent	
1	100.00%	Take the opportunity to take notes during training and review notes for the next day.

1 Respondents

Q38. In what ways could program faculty be more helpful in practicum coordination and supervision?

Count	Percent
3	100.00%

Count	Percent	
1	33.33%	Continue on coordinating with inhouse contacts in the various hospitals and labs across the valley.
1	33.33%	Faculty does a very good job and makes coordination easy.
1	33.33%	Good well rounded program.

3 Respondents

Q39. What specific recommendations could you make to enhance the practicum experience for students and clinical affiliate personnel?

Count	Percent
2	100.00%

Count	Percent	
1	50.00%	None.

Q40. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Olympus AU 400e

Count	Percent		
0	0.00%		Poor
1	33.33%		Fair
1	33.33%		Good
0	0.00%		Excellent
1	33.33%		Not Applicable (N/A)
3	Respondents		

Q41. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Coulter Brand AcT Diff 2 Hematology Analyzer

Count	Percent		
0	0.00%		Poor
1	33.33%		Fair
1	33.33%		Good
0	0.00%		Excellent

1	33.33%		Not Applicable (N/A)
3	Respondents		

Q42. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - AcroSpray Hematology Stainer

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
0	0.00%		Good
1	33.33%		Excellent
2	66.67%		Not Applicable (N/A)
3	Respondents		

Q43. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Centra-W Cell Washer

Count	Percent		
0	0.00%		Poor

1	33.33%		Fair
0	0.00%		Good
1	33.33%		Excellent
1	33.33%		Not Applicable (N/A)
3	Respondents		

Q44. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Ortho Gel System

Count	Percent		
0	0.00%		Poor
1	33.33%		Fair
0	0.00%		Good
2	66.67%		Excellent
0	0.00%		Not Applicable (N/A)

3	Respondents	

Q45. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - i-Stat Analyzer

Count	Percent	
0	0.00%	Poor
0	0.00%	Fair
0	0.00%	Good
1	33.33%	Excellent
2	66.67%	Not Applicable (N/A)
3	Respondents	

Q46. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Vein Viewer Imaging System

Count	Percent	
0	0.00%	Poor
0	0.00%	Fair

0	0.00%		Good
1	33.33%		Excellent
2	66.67%		Not Applicable (N/A)
3	Respondents		

Q47. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Swift Microscope

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
0	0.00%		Good
1	33.33%		Excellent
2	66.67%		Not Applicable (N/A)
3	Respondents		

Q48. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Vitek II

Count	Percent		
0	0.00%		Poor
1	33.33%		Fair
0	0.00%		Good
1	33.33%		Excellent
1	33.33%		Not Applicable (N/A)
3	Respondents		

Q49. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - BacTAlert System

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
1	33.33%		Good
1	33.33%		Excellent

1	33.33%	Not Applicable (N/A)
3	Respondents	

Q50. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Siemens CA - 530

Count	Percent	
0	0.00%	Poor
1	33.33%	Fair
0	0.00%	Good
1	33.33%	Excellent
1	33.33%	Not Applicable (N/A)
3	Respondents	

Q51. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Siemens PFA - 100

Count	Percent	
0	0.00%	Poor
0	0.00%	Fair

1	33.33%	Good
1	33.33%	Excellent
1	33.33%	Not Applicable (N/A)
3	Respondents	

Q52. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Clinitek Status

Count	Percent	
0	0.00%	Poor
1	33.33%	Fair
0	0.00%	Good
1	33.33%	Excellent
1	33.33%	Not Applicable (N/A)
3	Respondents	

SUPPLEMENTAL NARRATIVE QUESTIONS – PROGRAM (Program Activity)

Date Submitted: 03/04/2019 **Submitted by:** Heidi Schneiter

Data to be provided by Chair/Program Dir/Lead Faculty

Please respond on this form or attach additional pages. Answer only questions that are relevant to this program.

CORE MISSION:

1 How does this program relate to the Mission and Core Themes of the College?

The Associate of Applied Science (AAS) degree in Medical Laboratory Technician (MLT) relates to the Mission of the College as it provides education and training to enrich the individual while responding to the identified needs of the state and local community.

As a program in the Clinical Laboratory Science discipline, students choosing this program have the opportunity to elect this career path, or work toward the Bachelor of Applied Science degree offered at CSN.

The CLS discipline employs four full-time faculty members, each with expertise in the CLS field. Part-time faculty are also employed who have multiple years of clinical experience to share with the students.

The Medical Laboratory Technician program includes clinical practicum experiences that allow students to apply the knowledge and skills they have acquired in the classroom.

2 To the best of your knowledge, how and to what extent is this program essential because of state laws, regulations, outside agency regulations, Board of Regents or Legislative priorities?

The AAS-MLT program of Clinical Laboratory Sciences (CLS) is essential to the State of Nevada in that Medical Laboratory Technicians are required to have a national certification in order to apply for a Nevada license. All students who successfully complete the MLT program are eligible for national certification examinations.

3 How and to what extent does this program relate to programs at other NSHE institutions (for example, overlapping programs, articulation or transfer relationships, etc.)?

The College of Southern Nevada is the only NSHE institution to offer programs in CLS at the Bachelor of Applied Science degree and Associate of Applied Science degree levels.

4 How and to what extent does this program relate to programs at non-NSHE colleges in Southern Nevada?

The MLT program does not relate to programs at non-NSHE colleges in Southern Nevada.

5 How and to what extent does this program depend upon prerequisite courses from other disciplines at CSN?

The MLT program is dependent upon prerequisite courses in English; Biology; Chemistry; and Math. Students are also required to take Communications, Social Sciences, Human Relations and US and Nevada Constitution in order to receive the AAS degree.

6 How and to what extent does this program utilize other college resources for academic support (for example, library, technology, counseling, disability resource center, tutoring, writing or math centers, etc.)?

Library: Program students utilize the library for research projects.

Technology: All classrooms and laboratories have Smart Systems that are utilized in all courses. Students must access the learning management system for syllabi, lecture presentations, laboratory manuals, clinical notebooks and other supplemental material. Students are encouraged to use technology in classroom presentations.

Health Program Advising (HPA): Students are directed to HPA for assistance in the application process of the MLT program as well as degree plans to complete the program in the most efficient manner.

Disability Resource Center (DRC): Students are encouraged to seek the assistance of the DRC if they have a qualifying disability in order to increase their chances of success in the program.

Student Services/Retention: Students who are having difficulties in coursework are referred via the "e-lert" system in order to increase their chances of success in the program.

Testing Center: The testing center is utilized by students in on-line sections and by students needing to make-up an examination.

QUALITY:

7 Does this program have an advisory board, or does the department have an advisory board relevant to this program? Describe briefly.

The Clinical Laboratory Advisory Committee is composed of the Program Director, program faculty, community members, and representatives from the clinical affiliate sites. The Advisory Committee meets throughout the year to evaluate curriculum changes and address program concerns.

8 If this program has a specialized accreditation, is this accreditation necessary for alumni licensure or employability?

The MLT program has a specialized accreditation through the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).

NAACLS accreditation is necessary for students to challenge the American Society of Clinical Pathologists (ASCP) Medical Laboratory Technician certification examination under Route 1 guidelines. In addition, students are eligible to challenge the Medical Laboratory Technician examination given by American Medical Technologists (AMT). Both the ASCP and AMT certifications are accepted by the State of Nevada for licensure.

9 How and to what extent does this program contribute to CSN's regional or national reputation?

Graduates of the CSN CLS programs are well respected. Employer surveys are overwhelmingly positive.

Specialized national accreditation gives CSN national recognition.

DEMAND:

10 Describe the level and nature of external demand for this program (for example, occupational data, labor statistics, employer surveys, student surveys, etc.)?

According the U.S. Bureau of Labor statistics, job prospects for Medical Laboratory Technicians are best for persons who complete an accredited educational program and earn a professional certification. Nationally employment rates are expected to increase by 14%, and in the State of Nevada the projection is 21%.

11 Describe the level and nature of external financial or practical support for this program (for example, grants, donations, employer or clinical partnerships, etc.)?

Our accrediting body dictates financial resources “for continued operation of the educational program” and “each student must have reasonable access to and experience with modern equipment and supplies”. To this end, our program has been highly funded through grant funds, with the acquisition of approximately $100,000 in state-of-the-art equipment for our students in the last 5 years.

Practical support is given through our clinical affiliate sites as they provide training during the student’s clinical rotation in all areas of the laboratory. In addition, local affiliates support the program through the donation of expired reagents or reagents or kits no longer in use by the facility.

12 What other options exist for students in the region to earn this degree or certificate?

The College of Southern Nevada offers the only Clinical Laboratory Science degrees in the state.

COLLEGE OF SOUTHERN NEVADA MISSION AND CORE THEMES

SUPPLEMENTAL NARRATIVE QUESTIONS – DISCIPLINE/PREFIX (Teaching Activity)

Date Submitted: __03/04/2019___ **Submitted by:** Heidi Schneiter

Data to be provided by Chair/Program Dir/Lead Faculty

Please respond on this form or attach additional pages. Answer only questions that are relevant to this discipline.

CORE MISSION:

1 How does this discipline relate to the Mission and Core Themes of the College?

The discipline of Clinical Laboratory Sciences (CLS) relates to the Mission of the College in that three programs, including a skills certificate, are offered to accommodate the various levels of employment in CLS. This offers students the opportunity to choose their career path, either in the selection of a terminal degree or certificate; or to work through the career ladder offered by our discipline. The CLS discipline employs four full-time faculty members, each with expertise in the CLS field. Part-time faculty are also employed who have multiple years of clinical experience to share with the students. All programs include clinical practicum experiences that allow students to apply the knowledge and skills they have acquired in the classroom.

2 To the best of your knowledge, how and to what extent is this discipline essential because of state laws, regulations, outside agency regulations, Board of Regents or Legislative priorities?

The discipline of Clinical Laboratory Sciences (CLS) is essential to the State of Nevada in that employees in the discipline are required to have a national certification in their area in order to apply for a Nevada license. All students who successfully complete programs in the CLS discipline are eligible for national certification examinations.

3 How and to what extent does this discipline support general education requirements for CSN programs?

The Clinical Laboratory Sciences (CLS) discipline supports general education requirements for CSN programs as thirty-one general education credits are required for the CLS Associate of Applied Science degree; and fifty-four general education credits are required for the CLS Bachelor of Applied Science degree. General education requirements include mathematics; English composition; communications; human relations; natural science; fine arts/humanities/social sciences; and U.S. and Nevada constitutions. The Bachelor of Applied Science degree also includes a requirement of statistics.

4 How and to what extent does this discipline support programs at CSN?

Courses in the CLS discipline support the Bachelor of Applied Science degree in Medical Laboratory Science; the Associate of Applied Science degree in Medical Laboratory Technician; the Associate of Science degree in Dental Science; the Certificate of Achievement in Medical Assisting; and the Phlebotomy Skills Certificate.

5 How and to what extent does this discipline depend upon prerequisite courses from other disciplines at CSN?

The CLS discipline is dependent upon prerequisite courses in English; Biology; Chemistry; and Math. Students are also required to take Communications, Social Sciences, Human Relations and US and Nevada Constitution in order to receive a BAS or AAS degree.

6 How and to what extent does this discipline support programs at other NSHE institutions?

The CLS discipline does not support programs at other NSHE institutions. The College of Southern Nevada is the only NSHE institution to offer programs in CLS at the Bachelor of Applied Science degree and Associate of Applied Science degree.

7 How and to what extent does this discipline support student extracurricular activities at CSN?

Students are encouraged to participate in extracurricular activities at CSN as their schedules permit.

QUALITY:

8 How and to what extent does this discipline help to satisfy a program's specialized accreditation?

The Associate of Applied Science degree in Medical Laboratory Technician is accredited by the National Accrediting Agency for Clinical Laboratory Sciences.

The Bachelor of Applied Science degree in Medical Laboratory Scientist is accredited by the National Accrediting Agency for Clinical Laboratory Sciences.

9 How and to what extent does this discipline contribute to CSN's regional or national reputation?

Graduates of the CSN CLS programs are well respected. Employer surveys are overwhelmingly positive.

Specialized national accreditation gives CSN national recognition.

DEMAND:

10 Describe the level and nature of external demand for this discipline (for example, occupational data, labor statistics, employer surveys, student surveys, etc.)?

According the U.S. Bureau of Labor statistics, job prospects for Medical Laboratory Technicians are best for persons who complete an accredited educational program and earn a professional certification. Nationally employment rates are expected to increase by 14%, and in the State of Nevada the projection is 21%.

According the U.S. Bureau of Labor statistics, job prospects for Medical Laboratory Scientists are best for persons who complete an accredited educational program and earn a professional certification. Nationally employment rates are expected to increase by 12%, and in the State of Nevada the projection is 21%.

11 Describe the level and nature of external financial or practical support for this discipline (for example, grants, donations, employer or clinical partnerships, etc.)?

Our accrediting body dictates financial resources “for continued operation of the educational program” and “each student must have reasonable access to and experience with modern equipment and supplies”. To this end, our program has been highly funded through grant funds, with the acquisition of approximately $100,000 in state-of-the-art equipment for our students in the last 5 years.

Practical support is given through our clinical affiliate sites as they provide training during the student’s clinical rotation in all areas of the laboratory. In addition, local affiliates support the program through the donation of expired reagents or reagents or kits no longer in use by the facility.

12 What other options exist for students in the region to study in this discipline?

The College of Southern Nevada offers the only AAS-MLT degree in the state. Graduates of the AAS-MLT have the option to continue to the BAS-MLS program at the College of Southern Nevada, or they can apply to a number of online bachelor-completion options.

NAACLS

National Accrediting Agency
for Clinical Laboratory Sciences

A NON-PROFIT ORGANIZATION

April 12, 2011

Michael D. Richards, MD
President
College of Southern Nevada
6375 West Charleston Boulevard - W32E
Las Vegas, NV 89146

Dear President Richards:

Enclosed is the NAACLS Board of Directors' official accreditation award for your Medical Laboratory Technician program's accreditation as decided at the April 7, 2011 meeting.

The Board of Directors' award is based on the continuing accreditation review process that included a site visit of your program on November 18-19, 2010.

Accreditation for your program will continue until April 30, 2018. As a result, your program will commence the continuing accreditation process with submission of the Self-Study Report on April 1, 2017 and the scheduling of a site visit during October 2017. We provide this information to assist you in your program's administrative and financial planning.

This letter and the accompanying award represent formal accreditation by NAACLS. The NAACLS Certificate of Accreditation will be forwarded to the Program Director.

Sincerely,

Peggy Simpson

Peggy Simpson, MS, MT(ASCP)
President, NAACLS Board of Directors

cc: Patricia R. Castro, EdD, MT(ASCP)BB, Program Director
Janice Glasper, Department Chair

5600 N. River Road, Suite 720, Rosemont, IL 60018
Tele: 773.714.8880 FAX 773.714.8886 Email: naaclsinfo@naacls.org www.naacls.org

From: Edward Rotchford
To: Schneiter, Heidi
Subject: NAACLS Extension of Accreditation for combined review
Date: Friday, May 20, 2016 12:59:02 PM
Importance: High

This email constitutes official correspondence from NAACLS.

If you require a paper copy, please print this email for your records.

NAACLS
National Accrediting Agency for Clinical Laboratory Sciences

May 20, 2016

Heidi C. Schneiter, MEd, MT(ASCP)
Program Director
College of Southern Nevada
6375 W. Charleston Blvd, W1A
Las Vegas, NV 89146-

Dear Ms. Schneiter,

We have received and approved your request for a combined review of your MLS and MLT programs, resulting in a two (2) year extension of accreditation for your MLT program through April 30, 2020. The following renewal dates will apply:

- Self-study documents will be due on **April 1, 2019**
- A joint site visit will be scheduled during **Fall 2019**

There will be no subtractions to the next MLT accreditation award due to a one-time forgiveness extension given to align cycles.

Please contact me if you have any questions.

Sincerely,

Edward Rotchford
Accreditation Specialist

Area of Concern & Action Plan

Discipline: Clinical Laboratory Science

Department or Academic Unit: AAS- MLT

Academic Year: 2018-2019

Identified Area of Concern: Clinical Practicum Sites

Clinical Laboratory Science (CLS) students participate in multiple clinical practicum rotations following completion of their didactic courses. Over the past five years, the number of laboratory clinical practicum sites has decreased locally. There are a number of reasons for the decline such as, lack of staff at the clinical sites; consolidation of specialized laboratory testing to a core lab; and hospital corporatization. For example, Valley health Systems (VHS) has consolidated microbiology laboratory testing for all six VHS hospitals into one core laboratory. This reduction in clinical practicum sites may have an impact on student success and the ability of the CLS program to expand.

Action Plan:

CLS program director and faculty have fostered relationships with various clinical rotation site administrators. In order to maintain and possibly increase the number of clinical sites, CLS faculty will schedule on site visits with both current and non-participating site administrators. Additionally, the option of setting up a simulation laboratory for specialized rotations in Microbiology and Blood Bank will be explored. The decrease in clinical practicum sites has been recognized as a nationwide issue and simulation laboratories have become an acceptable alternative for the decrease in clinical practicum sites.

Department Chair _____ Date _____

Dean _____ Date _____

Area of Concern & Action Plan Form

Discipline: Clinical Laboratory Science

Department or Academic Unit: AAS- MLT

Academic Year: 2018-2019

Identified Areas of Concern: Aging Equipment and Service Agreements

The CLS program has been the fortunate recipient of Perkins grant money for purchase of a variety of clinical laboratory equipment. The standard life expectancy of laboratory equipment is five years. The purchase of an annual service agreement can increase the equipment life span by another four to five years. None of the CLS laboratory equipment are covered by service agreements. The equipment is aging and replacement parts are difficult to find. Discussions with CSN Office of Sponsored Projects have resulted in different responses as to whether service agreements using Perkins grant funding is an allowable item. Without service agreements or a replacement plan, CLS equipment will eventually become non-operational. CLS student success will be impacted due to lack of functional equipment for learning proper laboratory techniques.

Action Plan:

During the last National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) accreditation site visit in 2014, the committee was impressed with the wide variety of equipment utilized in the CLS teaching laboratories. CLS faculty is committed to maintaining and upgrading laboratory equipment to provide students with the most realistic learning experience. The CLS program will continue to apply for Perkins grant funding for replacement equipment and will continue to try to get a definitive answer regarding use of Perkins grant dollars for service agreements. Additionally, CLS faculty will develop a rubric for rating replacement equipment to ensure that the most reliable and cost efficient equipment is chosen for purchase.

_____ _____

Department Chair Date

_____ _____

Dean Date

_____ _____

VPAA Date

Academic Program Review:
BAS Medical Laboratory Scientist

Table of Contents

Academic Program Review:
BAS Medical Laboratory Scientist

Introduction

The Medical Laboratory Scientist (MLS) is an important member of the health care team in hospitals, clinics, medical research and teaching centers, and is an indispensable participant with physicians in providing critical diagnostic information. The MLS functions as a dependable, ambitious and highly motivated professional capable of handling high stress situations with ease and confidence.

The Medical Laboratory Scientist performs and interprets diagnostic laboratory procedures using state-of-the-art instrumentation to aid in the detection, diagnosis and treatment of disease; monitors the standards of accuracy and precision in the performance of tests; performs routine maintenance; analyzes and corrects instrument problems; researches, evaluates and implements new procedures; and may be responsible for fiscal/personnel management of laboratory.

The Bachelor of Applied Science degree in Medical Laboratory Scientist combines academic and laboratory courses on campus with practical experience at clinical affiliate sites. Upon successful completion of the program, students are awarded a Bachelor of Applied Science degree and become eligible to challenge a national certification examination. Students who pass a qualifying certification examination are eligible for Nevada state licensure as a Medical Laboratory Scientist.

Academic Program Review:
BAS Medical Laboratory Scientist

College, School, Department Mission Statements

CSN Mission Statement

The College of Southern Nevada creates opportunities and enriches lives with inclusive learning and working environments that support diversity and support student success. The College fosters economic development, civic engagement, and cultural and scientific literacy, while helping students achieve their educational, personal, and professional goals.

https://www.csn.edu/our-mission

ESHS Mission Statement

The mission of the Engelstad School of Health Sciences (ESHS) is to provide high quality, student-centered certificate and degree programs that meet the needs of state and local communities.

Medical Laboratory Scientist Program

The mission of the Medical Laboratory Scientist Program is to provide learning experiences that allow students to acquire theory and skills necessary to perform and interpret complex medical laboratory procedures, and to operate successfully as a laboratory professional.

The Medical Laboratory Scientist Program mission statement and outcomes have been developed based on industry and certification standards. The program mission supports the CSN mission as the program supports student success in their educational, personal, and professional goals of pursuing a career in the Medical Laboratory field. Additionally, student success, institutional effectiveness, and economic development are supported by graduation and placement rates of 100% for 2017-2018 as reported to the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).

Academic Program Review:
BAS Medical Laboratory Scientist

Faculty

The Clinical Laboratory Sciences Program employs one program director, three full-time faculty, one research associate, and one administrative assistant, which is shared with one other program.

Faculty perform ongoing evaluation of lecture and laboratory topics and activities. Course syllabi are reviewed and updated to complement current clinical practice. Faculty are required to obtain appropriate continuing medical education, and this is reflected in revisions to class materials.

The program employs part-time faculty, as needed, who have the appropriate educational background and clinical expertise. Minimum credentials for part-time faculty teaching upper division courses include a baccalaureate degree, and a national certification, as a medical technologist/medical laboratory scientist. Minimum credentials for part-time faculty teaching lower division courses may include an associate degree, and/or a national credential as a medical laboratory technician or phlebotomist. Part -time faculty are primarily hired to teach laboratory courses as they are usually actively practicing individuals capable of conveying current technical practices to the students.

Practicing medical laboratory scientists/medical technologists, medical laboratory technicians, and phlebotomists serve as clinical affiliate site instructors for students during scheduled clinical rotations. Clinical instructors have appropriate credentials and/or Nevada state licensure for their respective positions.

Please see Appendix A for faculty profiles.

Academic Program Review:
BAS Medical Laboratory Scientist

Student Information and Assessment

Medical Laboratory Scientist

Program Selection

The Medical Laboratory Scientist (MLS) Program is a Limited Entry Program, and accepts up to 10 students per year. Applications are submitted to the Office of Limited Entry Admissions, processed, and reviewed for consideration. Only the top-applicants are selected for entry. Selection is based on a point system, and selection criteria is available to students on the website. See Appendix B for application and selection criteria.

Students applying to the MLS program must have a minimum GPA of 2.5 or higher for program prerequisites, which include Biology courses, Chemistry and Math courses. Students must maintain a C or better (75% or higher) in all program courses in order to remain in the program.

The BAS-MLS degree is a 120-credit degree that includes general education and program specific courses, that complies with NSHE, College, and NAACLS accreditation guidelines.

Student Completion Information

Student completion information is provided annually to NAACLS, to the Dean of Health Sciences, and posted on the Medical Laboratory website. NAACLS requires reporting of a three-year rolling average. Data is noted below. Placement rates include employment in a related area and/or pursuing educational goals.

Academic Year	Graduation Rate	Placement Rate
2014-2015	85%	93%
2015-2016	93%	93%
2016-2017	96%	96%
2017-2018	100%	100%

Student Learning Outcomes

The student learning outcomes of the College of Southern Nevada Medical Laboratory Scientist program are to ensure that graduates are competent in the areas of professional practice listed below:

1. Select appropriate courses of action in accordance with established laboratory procedures.

2. Assess and correlate clinical and/or laboratory data through the application of theory and principles.

3. Evaluate and perform full range of clinical laboratory procedures, including quality assurance and quality control procedures.

4. Differentiate and resolve technical, instrument, and/or physiologic causes of unexpected or abnormal data.

Assessment

The Medical Laboratory Scientist Program assessment plan is an ongoing system for periodically and systematically reviewing the effectiveness of the program. In a continuing effort to provide quality education in clinical laboratory science, the MLS Program incorporates feedback from several sources in performing program review and evaluation. Responses and comments received from these sources are considered in planning curriculum and learning activities for future MLS students. See appendix C for the most current assessment results.

Annual Assessment Reports

The College of Southern Nevada requires annual assessment of programs and program courses according to a multi-year plan. The current plan for the MLS program concentrates on review and/or revision of educational outcomes/learning competencies in selected courses.
See appendix C for College Assessment Reports and ESHS LEAP Assessment for the MLS Program.

Graduate Surveys

In order to continue to meet the needs of future students, the MLS Program solicits input from graduates by requesting that they complete a survey rating their knowledge and technical ability in each major clinical area. Students are asked to comment on Program and College resources, as well as the quality of instruction received at clinical affiliate sites. Students are also asked to submit specific demographic information regarding type of employment and future educational plans. The remaining survey questions pertain to the overall effectiveness of the program. Students are asked to comment on program strengths, weaknesses, instrumentation, specific improvements, faculty, and preparation for national certification. See appendix D for the most recent results.

Academic Program Review:
BAS Medical Laboratory Scientist

Employer Surveys

In order to meet the future needs of the medical community, the CLS Programs (MLT and MLS) solicit input from potential employers by requesting that they complete a similar survey pertaining to student knowledge and technical ability in each of the major clinical areas. Employers are also asked to submit specific demographic information regarding the type of clinical facility, number of beds, employment of graduates, and importance of phlebotomy skills. Employers are also given an opportunity to make specific recommendations as to how the CLS Programs can better prepare graduates to function competently in the clinical setting. See appendix E for the most recent results.

Student Evaluation of Instruction

Upon completion of each course, students are given an opportunity to evaluate instruction by completing an on-line evaluation provided by the College. In addition to expressing their opinions on the course and didactic instructor, students are also asked to consider course organization, expectations and class discussion in their evaluation. Overall, students and graduates are satisfied with courses and instruction.

Students are also given an opportunity to evaluate clinical instructors and the overall practicum experience by completing a form contained in each practicum notebook.

Practicum Evaluations

Clinical instructors rate student performance of designated tasks on a scale of 1 to 5 (unacceptable to outstanding performance). There is a separate page in the practicum notebook for each task. Upon completion of a specific group of tasks, the student receives an overall performance evaluation, which includes an assessment of punctuality, attendance, accuracy, productivity, ability to learn, acceptance of criticism, communication and organization of time and resources.

Advisory Committee

The Advisory Committee is composed of the Program Director, program faculty, community members and representatives from the clinical affiliate sites. The Advisory Committee meets at least annually to evaluate curriculum changes and address program concerns.

Academic Program Review:
BAS Medical Laboratory Scientist

Curriculum Information

Certification Pass Rates

Certification pass rate information is provided annually to NAACLS, to the Dean of Health Science, and posted on the Medical Laboratory website. NAACLS requires reporting of a three-year rolling average. Data are noted below.

Academic Year	ASCP Certification Pass Rate	AMT Certification Pass Rate
2014-2015	100%	100%
2015-2016	82%	100%
2016-2017	84%	100%
2017-2018	83%	100%

Curricular Analysis

2016-2017: Student performance overall is above average, with graduation rates, certification pass rates, and graduate employment, or continued education, above the benchmarks set by the National Accrediting Agency for Clinical Laboratory Sciences. However, certification board passing rates have decreased over last 3 years. It was also noted that the Urinalysis/Body Fluid sub section of the certifying examination show below national average scores.

Action: Create discipline review courses. Create upper level Urinalysis & Body Fluids course. Approved through curriculum process and implemented in 2017.

Results: First cohort with curricular change in final semester. Will monitor effectiveness going forward.

Practicum Evaluation: After faculty discussion, the notation of 'Critical Parameters' has been added to practicum evaluations. Students must earn a MPL rating of 3 or better on critical parameters; overall task areas; and/or performance area/professionalism, as determined by the clinical site. Critical parameters include basic laboratory skills critical for safe patient care, both for the overall clinical laboratory and specific discipline, as well as the soft-skills of professionalism.

Action: Addition of "Critical Parameter" to practicum evaluations beginning Fall 2018.

Result: To date, all students have met critical parameters.

A recent issue has surfaced with the Medical Laboratory Scientist program and students receiving Financial Aid. Recent changes have restricted funding for the MLS prerequisite course(s) that have been put in place to better prepare the student for advanced coursework. In addition, as many of our students have a degree from another institution, students have been unable to continue to the bachelor's program from the associate degree program.

Action: The MLS program will begin to directly admit students to the program without the requirement of the completion of an AS or AAS degree (or equivalent) from an accredited Medical Laboratory Technician (MLT) program. The first cohort accepted via this route will begin Spring 2020. Result: No data at this time.

Academic Program Review:
BAS Medical Laboratory Scientist

Information, Technology, Space and Equipment Resources

Medical Laboratory Scientist

Library Resources

Library resources include a number of Health Science related databases, publications and periodicals. Additional resources are available to the students in CLS classrooms.

Computer Access

Computer access and software programs are sufficient for program students.

Computers connected to the Internet are available in CLS student laboratories for student use. Wi-Fi is available for student use throughout the campus. An academic computing center is located in the "C" building on the Charleston Campus as well as in the CSN library. Computers with a variety of tutorial software and word processing programs are available for student use during weekday, weekend and evening hours. Students can utilize these computers to access and print instructional materials required by program faculty.

Facilities

Classroom/laboratory space for the program is sufficient.

Each classroom assigned for CLS didactic instruction contains adequate seating for students, a whiteboard, PC/DVD combination, overhead projector and retractable viewing screen with SMART Classroom Technology.

Classroom/laboratory spaces are connected to a laboratory preparation room. The prep room contains chemical storage cabinets, an autoclave, flask scrubber, computers, refrigerators, freezer, biological and chemical safety hoods, a reverse osmosis system, and a deionized water filtration system. There are two fire extinguishers, 2 eyewash stations, a safety shower, fire blanket, and a hazardous spill clean-up kit. This room is also equipped with a negative-pressure ventilation system. A copy/fax machine is also located in this area.

Each permanent faculty and staff member has an office equipped with a telephone, computer, locking desk and file cabinet, and bookshelves. Security personnel also have card keys to the office doors. Faculty and staff computers are connected to a network system for printing and Internet access. A password is required for computer access. Fax and copy machines are located in faculty office common work area.

One administrative assistant is assigned to support the Clinical Laboratory Sciences Programs. The administrative assistant's area is equipped with a telephone, locking desk, computer, printer, and fax and copy machines.

Quality of facilities maintenance is generally adequate, however, response and notification of environmental issues is sometimes slow or non-existent. Excessive heat in student laboratory spaces in late spring, summer, and early fall have caused incidences of students, and faculty, feeling ill and light-headed. Students are required to wear laboratory coats and gloves for laboratory exercises; doors to the laboratory spaces cannot be propped open due to security concerns; and the use of fans is prohibited as students are working with biohazardous substances. This has been an on-going concern for a number of years, with no acceptable solution. Additionally, excessive heat also causes the equipment in the student laboratories to malfunction.

Unreliable power to department refrigerators and freezers have cost the program/College thousands of dollars in replacement costs for reagents. A plan is in place for backup generators that will hopefully address this issue.

Instructional Equipment

Equipment in the laboratory science program has been a critical component to the success of our students in the clinical setting. Each major clinical laboratory discipline (i.e., Microbiology, Hematology, Urinalysis, Blood Bank, Clinical Chemistry) is equipped with automation similar to instrumentation used in the clinical/hospital laboratories. Accreditation site visitors were impressed with our student laboratory experience, stating it was one of the best in the nation.

New technological advances and instrument malfunction require the updating of equipment in some areas.

The automated analyzer in the Clinical Chemistry laboratory is 12 years old and running on Windows 2000 software. It has recently become inoperable for the majority of the photometric testing performed in the student laboratory. The manufacturer no longer supports this analyzer. The program has pursued approval for a new analyzer for the last two years. The program will again request Perkins funding to replace this analyzer.

The automated analyzer in the Hematology laboratory is no longer in working order. The program has spent over $5000 to repair the analyzer, and unfortunately, now other internal workings have failed. Without the ability to purchase extended maintenance agreements, repairs sometimes are cost prohibitive. The program will request Perkins funding to replace this analyzer.

Academic Program Review:
BAS Medical Laboratory Scientist

External Factors

Medical Laboratory Scientist

Enrollment Trends

The Medical Laboratory Scientist program is a Limited Entry program with an application requirement of the completion of an AS or AAS degree (or equivalent) from an accredited Medical Laboratory Technician (MLT) program. This requirement allows for graduates from CSN and other institutions to complete their bachelor's degree at the College of Southern Nevada.

The application process allows for students currently in the AAS-MLT program at the College of Southern Nevada to apply, provided the student completes the AAS-MLT degree prior to the start of the fall semester. Most of our MLS students enter the program via this route. Over the last three years, the MLS program has accepted 29 students. Seventy nine percent (twenty-three students) of the MLT students at CSN moved directly into the MLS program; seventeen percent (five students) were returning CSN MLT graduates; and four percent (one student) was a graduate from outside of CSN.

Student to faculty ratio is 10 to 1 in lecture and student laboratory courses. The BAS-MLS program is the only program in the state among NSHE institutions.

Program Graduate Demand

As reported to the National Accrediting Agency for Clinical Laboratory Sciences, the three-year average placement rate, which includes graduate employment and/or pursuing additional education, is 96%.

Graduate Satisfaction

Overall, graduates are satisfied with the professional preparation of the MLS program. According to the MLS graduate survey results from 2015-2017, six of seven respondents ranked their professional preparation as good-excellent. One of seven respondents stated the degree was a step to a future educational goal of a Master's in Public Health.

Graduates also identified areas of improvement for the program including additional funding for updated equipment and reagents, and to add a review course for board exam preparation. See appendix D for graduate survey results.

Unique Elements

The Medical Laboratory Scientist program is the only NAACLS accredited program in the State of Nevada. Small class sizes allow for one-on-one instruction, if needed, for students. Well-equipped student laboratories encourage student interaction with the equipment that is necessary for the function of medical laboratories.

Challenges facing the program are not unique to the College of Southern Nevada, however, are common for medical laboratory education. Medical laboratories are becoming increasingly corporatized, and therefore, services are consolidated to optimize finances. For the education sector, this equates to fewer

clinical placement sites especially in Microbiology and Transfusion Medicine (Blood Bank). Due to the limitation of clinical placements, the number of students accepted into the program at the present time is 10.

Funding for equipment, consumables, maintenance, and repair was decreased a number of years ago, due to a decrease in State funding. While the funding levels have been steady since then, services and reagents increase annually. Maintenance contracts are expensive, and unable to be supported through current operating accounts. In the past, the program has been able to use expired reagents in the student laboratories that have been donated by local clinical affiliates. However, advances in technology no longer allow for the use of expired reagents for a number of analyzers, and has, therefore, increased the cost to the program. As previously mentioned, program graduates also have concerns about program funding.

A recent issue has surfaced with the Medical Laboratory Science program and students receiving Financial Aid. Recent changes have restricted funding for the MLS prerequisite course(s) that have been put in place to better prepare the student for advanced coursework. In addition, as many of our students have a degree from another institution; students have been unable to continue to the bachelor's program from the associate degree program.

The MLS program graduates have a 96% placement rate. Graduates are filling positions in the community, and this trend is likely to continue. According the U.S. Bureau of Labor statistics, job prospects for Medical Laboratory Scientists are best for persons who complete an accredited educational program and earn a professional certification. Nationally employment rates are expected to increase by 12%, and in the State of Nevada, the projection is 21%.

External Validation

The Medical Laboratory Scientist program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). NAACLS accredits a variety of programs in health-related fields and is recognized by the Council for Higher Education Accreditation (CAHEA). Recognition by CAHEA affirms that standards and processes of accrediting organizations are consistent with quality improvement, and accountability expectations that CAHEA has established. NAACLS also confirms the Code of Good Practice of the Association of Specialized and Professional Accreditation. NAACLS contact information is provided below:

National Accrediting Agency for Clinical Laboratory Sciences
5600 N. River Road, Suite 720
Rosemont, IL, 60018-5119
Ph. 773-714-8880
Fax: 773-714-8886
E-mail: info@naacls.org
www.naacls.org
Please see Appendix G for notice of accreditation award.

Heidi C. Schneiter
231 W. Kimberly Drive
Henderson, NV 89015

EDUCATION

University of Nevada, Las Vegas
Las Vegas, Nevada
Master of Education in Curriculum and Instruction
Emphasis: Career and Technical and Post-Secondary Education, 2013

University of Wisconsin-Oshkosh
Oshkosh, Wisconsin
Bachelor of Science/Letters and Science
Medical Technology, Minor: Chemistry, 1986

CERTIFICATIONS

American Society of Clinical Pathologists (ASCP)
Certified Medical Technologist #169458_1986 to present

LICENSURE

State of Nevada Department of Health and Human Services
Licensed General Supervisor
Clinical Laboratory Technologist #2092TGS-10_1993 to present

ASSOCIATIONS

American Society for Clinical Pathology
Associate Member_1986 to present

American Society for Clinical Laboratory Science
Professional I Member_ 2012 to present

ACADEMIC EXPERIENCE

College of Southern Nevada
Las Vegas, Nevada

Program Director_4/2014 to present
Clinical Laboratory Science Program

Professor_2015 to present

Interim Program Director_7/2008 to 4/2014
Clinical Laboratory Science Program

Instructor_8/2004 to present
Clinical Laboratory Science Program

Publications and Presentations

Gordon, H. R. D., Schneiter, H., & Bryant, R. (2016). Staff members' perceptions of student-veterans' transition. *Educational Research: Theory & Practice, 28*(1), 1 – 14.

Gordon, H. R. D., Schneiter, H., & Bryant, R. (2016). Academic faculty members' perceptions of student- veterans' transition. *Educational Research: Theory & Practice, 28*(2), 1 – 8.

Paper Session: Presented at American Public Health Association Annual Conference
October 31, 2016
Staff Members' Perceptions of Student Veterans' Transition at a Public Two Year and Four Year Institution
Howard Gordon, University of Nevada, Las Vegas
Heidi Schneiter, College of Southern Nevada
Ross Bryant, University of Nevada, Las Vegas

Paper Session: Presented at Northern Rocky Mountain Educational Research Association Annual Conference
October 7, 2016
Academic Faculty Members' Perceptions of Student-Veterans' Transition
Howard Gordon, University of Nevada, Las Vegas
Heidi Schneiter, College of Southern Nevada
Ross Bryant, University of Nevada, Las Vegas

Breakout Session: Presented at Nevada Public Health Association Annual Conference
September 23, 2016
Steff Members' Perceptions of Student-Veterans' Transition in Southern Nevada: Implications for Public Health
Howard Gordon, University of Nevada, Las Vegas
Heidi Schneiter, College of Southern Nevada
Ross Bryant, University of Nevada, Las Vegas
Vanessa Winn, College of Southern Nevada

COLLEGE OF SOUTHERN NEVADA SERVICE

College Assessment Council_2015-2016
Faculty Senate Curriculum Committee_2016 to present
General Education Curriculum Committee_2016 to present
Strategic Enrollment Planning Committee, Member_2013 to 2016
College Student Success Committee_2015-2018
Faculty Senator, Member_2006 to 2011; 2018 to present
Science and Technology Expo_2005 to present
Hiring Committees
- 2014-Dental Hygiene Instructor (chair of committee)
- 2014-Clinical Laboratory Science Instructor

ENGELSTAD SCHOOL OF HEALTH SCIENCES SERVICE

Program Directors Committee, Member_2008 to present
Clinical Laboratory Science Advisory Committee, Chair_2009 to present
ESHS Assessment Committee_2015-present
ESHS Strategic Planning Committee_2017 to present
Clinical Laboratory Science Advisory Committee, Member_2005 to 2008
Limited Entry Selection Committee, Member_2008 to present
Limited Entry Policy Committee, Member_2012 to present
Curriculum Committee, Member_2012 to present
Curriculum Committee, Chair_2016 to present
Development and Implementation of BAS-MLS degree_2010-2012

COMMUNITY SERVICE
Science and Technology Expo_2005 to present
Health Career Explorations Camp_2018

CLINICAL EXPERIENCE

Quest Diagnostics
Las Vegas, Nevada
Clinical Chemistry Department
Supervisor/Technologist_2/2000 to 10/2007

Associated Pathologist Laboratory
Las Vegas, Nevada
Hematology; Clinical Chemistry; Urinalysis
Technologist_12/1993 to 7/1998

The Blood Center of Southeastern Wisconsin
Milwaukee, Wisconsin
Hemostasis Laboratory
Technologist_12/1991 to 12/1993

Kaukauna Community Hospital
Kaukauna, Wisconsin
Laboratory Manager/Technologist_12/1991 to 2/1993

St. Elizabeth's Hospital
Appleton, Wisconsin
Shift Supervisor/Technologist_9/1986 to 12/1991

Patricia Armour
1401 Nadine Way
Boulder City, Nevada 89005

EDUCATION

Doctor of Philosophy– Health Related Sciences July, 2013-June, 2018
Major: Clinical Laboratory Science
Virginia Commonwealth University (VCU) Richmond, Virginia
Dissertation: Usefulness of the Captia™ Syphilis IgG EIA test method and reverse algorithm for detection of syphilis infection in a public health setting

Master of Public Administration January, 2008-August, 2011
University of Nevada Las Vegas (UNLV) Las Vegas, Nevada

Bachelor of Science-Medical Technology September, 1969-May, 1973
University of Wisconsin-Superior (UW-S) Superior, Wisconsin

Internship - Medical Technology May, 1972-May, 1973
St. Luke's Hospital Duluth, Minnesota

LICENSURE AND CERTIFICATION

Medical Technologist (ASCP) #087074 Issued October 17, 1973
State of Nevada General Supervisor Clinical Laboratory Technologist #93TGS-8 Issued January 13, 2003

WORK EXPERIENCE

Faculty Instructor – Medical Laboratory Program August, 2016 – present
College of Southern Nevada Las Vegas, Nevada

- Current tenure track instructor for Certificate, Associate, and Bachelor level lecture and laboratory courses in Clinical Laboratory Science phlebotomy, hematology, microbiology, laboratory operations, and review
- Participated in student assistance and advisement, specifically for prospective phlebotomy students
- Maintained five hours per week office hours
- Participated in multiple college service activities including ESHS Summer Explorations Camp for Clark County School District (CCSD) High School Juniors and Seniors
- Participated in multiple professional development activities including 2016 and 2018 renewal of Nevada State General Supervisor license with completion of 20 Continuing Education (CE) hours for each renewal period and poster presentation at the CSN 6th Annual Poster Fair on Student Success in January 2019
- Chairman, College of Southern Nevada (CSN) Engelstad School of Health Sciences (ESHS) Strategic Planning Taskforce
- Committee member ESHS Inter-professional Education committee
- Committee member ESHS Program Director/Huddle committee
- Committee member ESHS Scholarship committee
- Committee member CSN Faculty Senate Salary and Benefits committee

Laboratory Manager/Responsible Official/Technical Supervisor June, 2003 - August, 2016
Southern Nevada Health District Las Vegas, Nevada

- Established new branch of Nevada State Public Health Laboratory, the Southern Nevada Public Health Laboratory (SNPHL), to perform emerging pathogens, epidemiological, and sexually transmitted disease testing for Southern Nevada Health District (SNHD) and Centers for Disease Control and Prevention (CDC) Laboratory Response Network (LRN) bioterrorism testing.
- Developed staffing plan and hired 18 technical and clerical staff.
- Developed and provided staff training and competencies for Laboratory Information Management System

(LIMS), safety, security, incident response, molecular, microbiology, immunology, hematology and phlebotomy.

- Prepared and managed $3.2 million annual budget including inventory control and supply management.
- Managed multiple grants including $1.2 million CDC Public Health Emergency Preparedness (PHEP) cooperative agreement.
- Planned, installed, and administered LIMS (Allscripts Sunrise Lab) including multiple instrument interfaces.
- Maintained readiness for State and Federal Clinical Laboratory Improvement Amendments (CLIA) inspections and participated in multiple inspections. Provided written documentation for corrective action taken to address any deficiencies identified during the inspection.
- Developed and implemented Food and Drug Administration (FDA) and non-FDA approved test method verification protocols including Individualized Quality Control Plan (IQCP) for multiple molecular, microbiology, hematology, and immunology test methods. Established laboratory test performance criteria.
- Performed high complexity molecular testing for respiratory, gastrointestinal, and bioterrorism agents.
- Performed moderate to high complexity microbiology, immunology, hematology, and microbiology testing.
- Maintained compliance with requirements of the Federal Select Agent Program (FSAP) including facility operation of a Biosafety Level 3 (BSL3) laboratory, security, biosafety, and incident response as designated Responsible Official (RO). Participated in multiple FSAP inspections and provided written documentation for corrective actions taken to address any identified deficiencies.
- Developed and maintained SNPHL safety and health program including staff training.
- Participated in multiple SNHD epidemiological outbreak investigations as laboratory team lead.
- Established and monitored Quality Control (QC) and Quality Assurance (QA) for all departments including enrollment in proficiency testing, establishment of acceptable levels of analytic test performance, and creation of procedures in Clinical and Laboratory Standards Institute (CLSI) format.
- Resolved technical problems and ensured remedial actions were taken when test systems deviated from established performance specifications.
- Ensured test results were not reported until all corrective actions were taken and test systems were functioning as expected.
- Developed and maintained local courier service.
- Created monthly reports and laboratory statistics.
- Developed bioterrorism agent collection protocols and training for First Responders and Federal Bureau of Investigation (FBI).
- Completed Collaborative Institutional Training Initiative (CITI) Basic Biomedical Research training.
- Completed College of American Pathologists (CAP) laboratory inspector training and participated on state laboratory inspection team.

Laboratory Technologist October, 1991-June, 2003
Family Doctors of Boulder City Boulder City, Nevada

- Supervised and trained two employees at busy physician office laboratory.
- Performed testing, calibration, and maintenance of automated chemistry, urinalysis, and hematology equipment.
- Developed and provided waived and moderate complexity test training and competencies for laboratory and clinic staff.
- Installed and maintained LIMS (Antek LabDaq) including instrument interfaces. Assisted with development of LIMS billing interface with internal office electronic health record (EHR).
- Developed and completed method verification of multiple FDA approved test methods and established laboratory performance criteria.
- Developed QC and QA programs. Interpreted QC records and maintained QA program, including establishment of acceptable levels of analytic performance.
- Ensured enrollment in approved proficiency testing program, monitored participation, and reviewed results.
- Resolved technical problems and ensured remedial actions were taken when test systems deviated from established performance specifications.
- Ensured test results were not reported until all corrective actions were taken and test systems were

functioning as expected.

- Purchased supplies and maintained inventory.
- Established and wrote laboratory policies and procedures.
- Maintained readiness for state CLIA inspections; participated in multiple inspections and prepared written response to any identified deficiencies.
- Received national recognition from Medical Laboratory Observer as 2003 Medical Laboratory of the Year.

Senior Scientist - Quality Assurance Department June, 1990 – October 1991
Lockheed Engineering and Sciences Company Las Vegas, Nevada

- Performed technical review of organic analysis data produced by laboratories in the Contract Laboratory Program (CLP) and prepared detailed reports.
- Developed and wrote Standard Operating Procedures (SOPs) for Quality Assurance Department (QAD).
- Streamlined procedures for storage, inventory, and disposition of data packages.
- Prepared weekly, monthly, and semi-annual reports for QAD.
- Coordinated flow of information from the US Environmental Protection Agency (EPA) to Lockheed Engineering and Sciences Company.

Medical Technologist November, 1981-June, 1990
Boulder City Hospital Boulder City, Nevada

- Performed phlebotomy, chemistry, hematology, coagulation, urology, microbiology, and transfusion medicine testing at 35-bed acute hospital.
- Maintained multiple chemistry, hematology, and coagulation analyzers.
- Purchased laboratory supplies and maintained inventory.
- Wrote and revised laboratory procedure manuals; interpreted QC records.
- Maintained readiness for state and CAP inspections, participated in inspections, and responded to inspection deficiencies.
- Participated in proficiency and staff competency testing.

Medical Technologist July, 1978-September, 1981
Superior Memorial Hospital Superior, Wisconsin

- Performed phlebotomy, chemistry, hematology, coagulation, special chemistry, urology, immunology, microbiology, and transfusion medicine testing at 120-bed acute care hospital laboratory.
- Maintained multiple automated chemistry, hematology, and coagulation analyzers.
- Participated in proficiency and staff competency testing.

Hematology/Coagulation Supervisor September, 1975-June, 1978
Sunrise Hospital Las Vegas, Nevada

- Supervised and trained 7 staff in hematology/coagulation section of 500-bed acute care hospital laboratory.
- Wrote and revised laboratory procedure manuals; interpreted QC records.
- Developed work schedules and maintained supplies.
- Implemented installation of LIMS (Med-Lab) for hematology/coagulation section.
- Maintained readiness for and participated in CAP inspections.
- Monitored proficiency testing performance and provided written response to failed events.\
- Trained staff and provided staff competency testing.

Medical Technologist February,1974-September,1975
Superior Memorial Hospital Superior, Wisconsin

Same duties as previously described for this hospital.

Medical Technologist May, 1973-February, 1974
St. Luke's Hospital Duluth, Minnesota

- Performed phlebotomy, hematology, coagulation, urology, microbiology, chemistry, and transfusion

- medicine testing in 300-bed acute care hospital.
- Maintained multiple automated laboratory equipment.

GRANTS

Principal Investigator $20,000 Quality Initiatives grant from Association of Public Health Laboratories (APHL) in 2010 to establish year-round pediatric respiratory virus surveillance testing at SNPHL.

Principal Investigator $10,000 Quality Initiatives grant from APHL in 2014 to develop and provide biosafety training to Clark County, Nevada clinical microbiology laboratories.

COMMITTEE MEMBERSHIP

CSN ESHS Strategic Planning Taskforce, Chairman 2017-current
CSN Interprofessional Education (IPE) Committee 2017-current
CSN ESHS Program Director/Huddle Committee 2017-current
CSN Faculty Senate Salary and Benefits Committee 2018-current
CSN ESHS Scholarship Committee 2018-present
APHL Sexually Transmitted Disease (STD) subcommittee 2012-2018
UNLV Institutional Biosafety Committee (IBC) 2005-2016
SNHD Safety Committee and Outbreak Investigation Team 2005-2016

SKILLS

Excellent laboratory technical skills in testing, interpreting, and reporting of biological and environmental samples
Extensive knowledge of calibrating, operating, and maintaining automated laboratory equipment
Experienced in laboratory safety including establishing and implementing safety and health programs
Excellent Quality Assurance, process improvement, and workflow analysis skills
28 years laboratory supervisory/managerial experience including staff training and competencies
Proficient in computer operation including Word, Excel, SPSS, PowerPoint, Visio, Publisher, Blackboard, Soft Chalk, and Canvas
Excellent organizational skills
Excellent writing skills
Excellent oral presentation skills
Excellent leadership skills
Excellent technical and training skills

PUBLICATIONS AND PRESENTATIONS

Armour, P. (2018). *Usefulness of the Captia™ Syphilis IgG EIA test method and reverse algorithm for detection of syphilis infection in a public health setting*. (Doctoral dissertation). Retrieved from https://scholarscompass.vcu.edu/etd/5341/

Armour, P., Nguyen, L., Lutman, M., and Middaugh, J. (2013). Evaluation of the Novel Respiratory Virus Surveillance program: Pediatric Early Warning Sentinel Surveillance (PEWSS). *Public Health Reports,128*(Suppl 2), 88-96.

Fischer, G.E., Schaefer, M.K., Labus, B.J., Sands, L., Rowley, P., Azzam, I.A., Armour, P., Khudyakov, Y.E., Lin, Y., Zia, G., Patel, P.R., Perz, J.F. and Holmberg, S.D. (2010). Hepatitis C Virus Infections from Unsafe Injection Practices at an Endoscopy Clinic in Las Vegas, Nevada, 2007-2008. *Clinical Infectious Diseases, 51*(3), 267-273.

Armour, P., Cruzada, S., Schneiter, H., and Simpson, M. (2019, January). *Assessment of Learner Competency Using Classroom Assessment Technique (CAD) 39: Process Analysis.* Poster session presented at the College of Southern Nevada 6th Annual Poster Fair on Student Success, Las Vegas, Nevada.

Armour, P. (2016). *Hepatitis C Outbreak in a Las Vegas Endoscopy Center – the rest of the story*. Presented at 2016 American Association of Bioanalysts (AAB) Educational Conference, Las Vegas, Nevada.

Armour, P. (2013). *Steps in a Foodborne Outbreak Investigation*. Presented at 2013 American Association of Bioanalysts (AAB) Educational Conference, Las Vegas, Nevada.

Armour, P. (2011). *Syphilis sample collection, testing and result interpretation*. Presented at SNHD Disease Investigation and Intervention Specialists quarterly meeting, Las Vegas, Nevada.

Armour, P. (2011). *Internal Safety Training at SNPHL*. Presented at CDC National Laboratory Training Network (NLTN) Conference VI, Portland, Oregon.

Armour, P. (2011). *Public Health Control of Infectious Diseases.* Presented to UNLV Nursing students, Las Vegas, Nevada.

COMMUNITY ACTIVITIES

President, Andrew J Mitchell Elementary School Parent-Teacher Association (PTA), Boulder City, Nevada
President and Treasurer, Boulder City Henderson Swim Team
Treasurer, Boulder City Little League
Treasurer, Boulder City American Legion Baseball Team
Commissioner, Boulder City Park and Recreation Commission
Back Stage Manager, Dance Etc Dance Studio, Boulder City, Nevada

Appendix A: Faculty

Michael B. Simpson
4504 San Joaquin Ave.
Las Vegas, NV 89102
Michael.Simpson@CSN.EDU

EDUCATION

1973
Bachelor of Arts: Adams State University
Alamosa, Colorado

1986
Master of Science: Northern Arizona University
Flagstaff, Arizona

PROFESSIONAL CERTIFICATION

1975-Present
MT (ASCP) 097466

1988-Present State of Nevada
General Supervisor 443TGS-13

1987
Georgia C3b Technologist
Medicare Eligible

PUBLICATION

The Utility of Acute Phase Proteins in Early Disease Detection
Presented by Co-Author Timothy N. Warner PhD.
1988 Miami ASM Convention
Abstracts of the Annual Meeting of the American Society for Microbiology 1988, 8-13 May 1988, Miami Beach, Florida

TEXTBOOK REVIEWS

Textbook of Diagnostic Microbiology, Sixth Ed.
Mahon/Lehman
Elsevier 2019

Phlebotomy Essentials, 6th. Ed.
McCall/Tankersley
Wolters Kluwer 2016

Appendix A: Faculty

DOMESTIC PRESENTATIONS

PAMET USA 15th National Convention
ZIKA Virus, Past Present and Future
August 5, 2016
Las Vegas, Nevada

INTERNATIONAL PRESENTATIONS

First Cagayan Valley PAMET Inter-Chapters CPD Assembly 2018
Anticoagulant Therapy Past, Present and Future
Tumor Markers
Saint Mary's University
Bayombong, Nueva Vizcaya, Philippines
July 22, 2018

EMPLOYMENT HISTORY

08/20/2012-Present
CLS Professor
College of Southern Nevada
Las Vegas, Nevada

05/24-2018-Present
Per Diem General Supervisor
and
Clinical Coordinator for CSN CLS Program
Lab Express
4550 East Charleston Blvd., Las Vegas, Nevada 89104

June 2014-December 2018
Per Diem General Supervisor
Diagnostic Center of Medicine
Las Vegas, Nevada

11/15/2007 - 08/16/2012 Full Time
8/16/2012 - June 2014 per Diem
Staff Technologist/General Supervisor
Desert View Hospital
Pahrump, Nevada

2000-July 20, 2007
Grave Shift Supervisor
Quest @ Valley Hospital
Las Vegas, Nevada

Appendix A: Faculty

1992-2000
APL Micro/Viro Tech
APL Laboratories Inc.
Las Vegas, Nevada

1991-1992
Part Time Micro Tech
APL Laboratories Inc.
Las Vegas, Nevada

1990-1992
Laboratory Manager
Diagnostic Center of Internal Medicine
Las Vegas, Nevada

1989-1990
APL Laboratories Inc.
Micro/Viro Tech
Las Vegas, Nevada

1987-1989
Laboratory Manager
NYE Regional Medical Center
Tonopah, Nevada

Summer of 1987
Conejos Community Hospital
Medical Technologist/Blood Gas/ECG Tech
Lajara, Colorado

1986-1987
Ria Technologist
Smith-Kline/Bioscience
Atlanta, Georgia

1979-1986
Swing Shift Supervisor
Flagstaff Medical Center
Flagstaff, Arizona

1978-1979
Graduate Teaching Assistant
University of Arizona
Tucson, Arizona

Appendix A: Faculty

1976-1978
Staff Technologist
Flagstaff Community Hospital
Flagstaff, Arizona

1974-1976
Staff Technologist/ECG Tech
Alamosa Community Hospital
Alamosa, Colorado

1973-1974
Medical Technology Internship
Parkview Episcopal Hospital
Pueblo, Colorado

FACULTY PROFILE

Name: **SHIRLEY F. CRUZADA, Ed.D., MS, MT(AMT)**

Office: **Bldg. A – 158J CSN West Charleston Campus**

E-mail Address: **shirley.cruzada@csn.edu**

Office Phone: **(702) 651-7378**

Academic Qualifications:

1. Doctor of Education (major in Educational Management)
   Trinity University of Asia, Quezon City, Philippines

2. Master of Science in Public Health (major in Med. Parasitology, with Med. Microbiology as cognate) University of the Philippines in Manila

3. Bachelor of Science in Medical Technology
   Far Eastern University, Manila

Tenure Status: Professor since 2010

Scholarly/Creative Activities: (2014-2018)

Prepared PowerPoint presentations on the following lecture topics that I delivered during the Philippine Association of Medical Technologists (PAMET) Nevada Chapter and PAMET-USA, Inc. continuing education (CE) seminars:

a) Alzheimer's Disease: Updates on Clinical Laboratory Tests
b) Stem Cell Transplantation: From Research Laboratory to Standard Care of Treatment
c) Stress and Its Effect on the Immune System
d) Blood Type: Implications on Diet and Personality
e) Endovascular Disease: Up Close and Personal

Institutional Service:

a) Member, Search Committee
   =Participated in the selection of the top three candidates for the vacant faculty positions in the college.
   =Was in three search committees for 2018 alone.
b) Member, Inter-Professional Education (IPE) Committee
   =Participated, together with the CLS Faculty and students in the Health Fairs held by the IPE Committee in 2017 and 2018.

Professional Service:

a) Served as lecturer in the Continuing Education Seminars of the PAMET-USA, Inc. (Philippine Association of Medical Technologists working in the USA) during national conventions from 2014 – 2018 as well as in the quarterly seminars of PAMET USA – Nevada Chapter.

b) Volunteered as Inspirational Speaker to MT undergraduates and graduates in the Philippines during my yearly Christmas vacations. I had to coordinate with the Philippine Association of Schools of Medical Technology & Hygiene (PASMETH) and the different MT Schools and Review Centers for my "giving back" lectures. My lecture was on the importance of the MT profession in health care delivery and on the job opportunities available in the USA (based on the latest ASCP Wage and Vacancy Survey results).

=delivered my lecture in 2 review centers in December 2016 and 2017.

=Dec. 21, 2018 = Pioneer Educational Review Center, Manila

=Jan 7, 2019 =joint PASMETH Academy and Top One Master Review Center, Manila

=Jan 8, 2019 AM =College of Medical Technology, Trinity University of Asia, Quezon City

PM =Pioneer Educational Review Center (with the new batch of reviewees)

=Jan 9, 2019 =Acts Review Center, Manila

Professional Development Activities for the past five years:

a) President =PAMET USA-Nevada Chapter, 2014 – 2015
=conducted quarterly CE seminars with myself and invited guests as speakers;
=conducted community projects of the chapter; and
=represented the chapter in the PAMET USA, Inc. national conventions and executive board meetings.

b) President =PAMET USA, Inc., 2016 – 2018
=presided over national conventions and executive board meetings;
=participated in CE seminars as speaker; and
=attended the different chapters' induction activities as keynote speaker / inducting officer.

c) Auditor =FEU-NRMF MTIAS, 2018 - 2020
=This is the Far Eastern University – Nicanor Reyes Medical Foundation Medical Technology International Alumni Society composed of graduates working in the USA and Canada. We provide scholarships to indigent but academically qualified MT students. We also conduct medical missions in remote communities and provide CE lectures in the USA and Philippines.

Medical Laboratory Scientist

LIMITED ENTRY

BACHELOR OF APPLIED SCIENCE (BAS) | REQUIRED CREDITS: 120 | DEGREE CODE: MLS-BAS

This is a limited-entry program. Some of these courses are program prerequisites and MUST be completed before a student is considered eligible for entry into the Program. Students MUST attend a Health Programs orientation and meet with a Health Programs advisor for additional advisement.

DESCRIPTION

The Medical Laboratory Scientist (MLS) is an important member of the health care team in hospitals, clinics, medical research and teaching centers, and is an indispensable participant with physicians in providing critical diagnostic information. The MLS functions as a dependable, ambitious and highly motivated professional capable of handling high stress situations with ease and confidence.

The Medical Laboratory Scientist performs and interprets diagnostic laboratory procedures using state-of-the-art instrumentation to aid in the detection, diagnosis, and treatment of disease; monitors the standards of accuracy and precision in the performance of tests; performs routine maintenance; analyzes and corrects instrument problems; researches, evaluates, and implements new procedures; and may be responsible for fiscal/personnel management of laboratory.

The Bachelor of Applied Science degree in Medical Laboratory Scientist combines academic and laboratory courses on campus with practical experience at clinical affiliate sites. The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Road, Suite 720, Rosemont, IL 60018-5119, (877) 939-3597. Students successfully completing the program are eligible to take a national certifying examination.

STUDENT LEARNING OUTCOMES

- Select appropriate courses of action in accordance with established laboratory procedures.
- Assess and correlate clinical and/or laboratory data through application of theory and principles.
- Evaluate and perform full range of clinical laboratory procedures, including quality assurance and quality control.
- Differentiate and resolve technical, instrument, and/or physiologic causes of unexpected or abnormal data.

PLEASE NOTE - The courses listed below may require a prerequisite or corequisite. Read course descriptions before registering for classes. All MATH and ENG courses numbered 01-99 must be completed before reaching 30 total college-level credits. No course under 100-level counts toward degree completion.

GENERAL EDUCATION REQUIREMENTS (51 CREDITS)

MATHEMATICS (3 credits)
MATH 124 or above

ENGLISH COMPOSITION (3-5 credits)
ENG 100 or 101, or 113

COMMUNICATIONS (6 credits)
ENG 102 or 114; or COM 101; and ENG 333

HUMAN RELATIONS (3 credits)
ALS 101; ANTH 101, 112, 201, 205; HIST 105, 106, 107, 150, 151, 210, 247, 260; HMS 130; MGT 100B, 283; PHIL 135; PSC 201; PSY 101, 102, 207, 208, 261; SOC

NATURAL SCIENCE (23 credits)

BIOL 196, 197, 325; **or** BIOL 223, 224, 325 **and** CHEM 110, 111, 220; **or** CHEM 121, 122, 220

FINE ARTS/HUMANITIES/SOCIAL SCIENCES (9 credits)
PHIL 302 **and** PHIL 311 **and** 3 credits from the following:
AM; ANTH; ART; COM; ECON; ENG 223 or above; GEOG 106 or above; HIST; World Languages; Music; PHIL; PSC; PSY; SOC; THTR; WMST 113

U.S. AND NEVADA CONSTITUTIONS (4-6 credits)
PSC 101; or HIST 101 **and** HIST 102; or HIST 101 **and** HIST 217

SPECIAL PROGRAM REQUIREMENTS (69 CREDITS)

CORE REQUIREMENTS (66 credits)

CLS 151	Phlebotomy	2
CLS 152	Applied Phlebotomy	2
CLS 161	Urinalysis and Body Fluids	1
CLS 162	Applied Urinalysis and Body Fluids	1
CLS 241	Clinical Chemistry I	3
CLS 242	Applied Clinical Chemistry I	2

SPECIAL PROGRAM REQUIREMENTS CONTINUED

CLS 251	Immunology/Immunohematology I	2
CLS 252	Applied Immunology/Immunohematology I	2
CLS 265	Laboratory Operations I	1
CLS 271	Clinical Microbiology I	3
CLS 272	Applied Clinical Microbiology I	2
CLS 291	Hematology I	2
CLS 292	Applied Hematology I	2
CLS 361	Urinalysis and Body Fluids II	2
CLS 365	Laboratory Operations II	1.5
CLS 446	Clinical Chemistry II	2
CLS 447	Applied Clinical Chemistry II	1
CLS 448	Hematology II	2
CLS 449	Applied Hematology II	1
CLS 456	Immunology/Immunohematology II	2
CLS 457	Applied Immunology/ Immunohematology II	1
CLS 476	Clinical Microbiology II	2
CLS 477	Applied Clinical Microbiology II	1
CLS 478	Research Methods	2
CLS 486	CLS Clinical Chemistry Review	1.5
CLS 487	CLS Hematology Review	1.5
CLS 488	CLS Immunology/Immunohematology Review	1.5
CLS 489	CLS Clinical Microbiology Review	1.5
CLS 490	CLS General Laboratory & Urinalysis Review	1.5
CLS 491	Clinical Practicum - Chemistry	4
CLS 493	Clinical Practicum - Immunology/ Immunohematology	4
CLS 495	Clinical Practicum - Microbiology	4
CLS 497	Clinical Practicum - Hematology	4

Statistics Elective (3-4 credits)

STAT 152	Introduction to Statistics	3
ECON 261	Principles of Statistics I	3
PSY 210	Introduction to Statistical Methods	4
SOC 210	Introduction to Statistical Methods	4

NOTE • Course numbers with the "B" suffix may be non-transferable for a NSHE baccalaureate degree.

- Course numbers with the "H" suffix are designated Honors-level courses and can be used to fulfill equivalent general education requirements. For more information visit www.csn.edu/honors.
- In no case, may one course be used to meet more than one requirement except for the Values and Diversity general education requirement (only AA, AS, and AB degrees) which may be used to fulfill the corresponding general education or emphasis requirement.
- Students may elect to graduate using the degree requirements in effect at the time of matriculation, or when they declared or changed major or the current catalog. If a program is official after a student has matriculated, the student may choose the degree requirements of the new program. In no case may a student use a catalog, which is more than six years old at the time of graduation.

Medical Laboratory Scientist

LIMITED ENTRY

BACHELOR OF APPLIED SCIENCE (BAS) | REQUIRED CREDITS: 120 | DEGREE CODE: MLS-BAS

FULL-TIME STUDENT DEGREE PLAN

Add more semesters to modify this plan to fit part-time student needs.

PLEASE NOTE:

- Due to the high rigor of the MLS program, it is highly recommended that students complete all general education requirements before applying to the program.
- CLS courses must be taken in the order indicated.

FIRST SEMESTER (Summer)	Credits
MATH 124 or above[1]	3
TOTAL CREDITS	***3***

SECOND SEMESTER (Fall)	Credits
Complete English Composition (see courses previous page)	3-5
Complete Human Relations (see courses previous page)	3
CHEM 110 or 121[2]	4
Complete Statistics Elective	3-4
TOTAL CREDITS	***13-16***

THIRD SEMESTER (Spring)	Credits
BIOL 196[3] or 223	4
CHEM 111 or 122	4
Complete US/Nevada Constitutions[4] (see courses previous page)	4-6
TOTAL CREDITS	***12-14***

FOURTH SEMESTER (Summer)	Credits
CHEM 220 Introductory Organic Chemistry	4
TOTAL CREDITS	***4***

FIFTH SEMESTER (Fall)	Credits
Complete Communications (see courses previous page)	6
PHIL 302 Intermediate Reasoning and Critical Thinking	3
Complete Fine Arts/Humanities/Social Science[5] (see courses previous page)	3
TOTAL CREDITS	***12***

SIXTH SEMESTER (Spring)	Credits
CLS 161 Urinalysis and Body Fluids	1
CLS 162 Applied Urinalysis and Body Fluids	1
CLS 265 Laboratory Operations I	1
CLS 271 Clinical Microbiology I	3
CLS 272 Applied Clinical Microbiology I	2
TOTAL CREDITS	***8***

SEVENTH SEMESTER (Fall)	Credits
BIOL 197 or 224	4
CLS 151 Phlebotomy	2
CLS 152 Applied Phlebotomy	2
CLS 241 Clinical Chemistry I	3
CLS 242 Applied Clinical Chemistry I	2
TOTAL CREDITS	***13***

EIGHTH SEMESTER (Spring)	Credits
BIOL 325 Molecular Diagnostics	3
CLS 251 Immunology/Immunohematology	2
CLS 252 Applied Immunology/Immunohematology	2
CLS 291 Hematology I	2
CLS 292 Applied Hematology I	2
TOTAL CREDITS	***11***

NINTH SEMESTER (Fall)	Credits
CLS 476 Clinical Microbiology II	2
CLS 477 Applied Clinical Microbiology II	1
CLS 448 Hematology II	2
CLS 449 Applied Hematology II	1
CLS 478 Research Methods	2
CLS 361 Urinalysis and Body Fluids II	2
TOTAL CREDITS	***10***

TENTH SEMESTER (Spring)	Credits
PHIL 311 Professional Ethics	3
CLS 365 Laboratory Operations II	1.5
CLS 446 Clinical Chemistry II	2
CLS 447 Applied Clinical Chemistry II	1
CLS 456 Immunology/Immunohematology II	2
CLS 457 Applied Immunology/Immunohematology II	1
TOTAL CREDITS	***10.5***

ELEVENTH SEMESTER (Fall)	Credits
CLS 491 Clinical Practicum - Chemistry	4
CLS 493 Clinical Practicum - Immunology/Immunohematology	4
CLS 495 Clinical Practicum - Microbiology	4
CLS 497 Clinical Practicum - Hematology	4
TOTAL CREDITS	***16***

TWELFTH SEMESTER (Spring)	Credits
CLS 486 CLS Clinical Chemistry Review	1.5
CLS 487 CLS Hematology Review	1.5
CLS 488 CLS Immunology/Immunohematology Review	1.5
CLS 489 CLS Clinical Microbiology Review	1.5
CLS 490 CLS General Laboratory & Urinalysis Review	1.5
TOTAL CREDITS	***7.5***

DEGREE PLAN TOTAL CREDITS **120-125**

[1] The prerequisite for MATH 124 includes MATH 096 or 097 with a grade of C or better; or a satisfactory ACT/SAT/Placement test score.

[2] CHEM 121 requires CHEM 103 or CHEM 110 or a passing score on the Chemistry Placement Exam.

[3] Students planning to apply to the BAS MLS program should take BIOL 196.

[4] PSC 101 completes this requirement at 4 credits. If choosing the HIST option, take HIST 101 in the second semester and see a counselor for when to take either HIST 102 or 217 in a different semester.

[5] Under the "Fine Arts/Humanities/Social Science" heading on the General Education Requirements side, select from the choices that follow the sentence fragment "Plus 3 credits from the following...

ASSOCIATE OF APPLIED SCIENCE
Spring 2020 Selection Criteria

Qualified applicants must possess a High School Diploma, GED, or Higher Education Degree (Associate Degree or higher) and a minimum 2.5 cumulative program perquisite GPA. Applicants will be ranked and selected by the following point system:

CUMULATIVE PREREQUISITE GPA:

- 2.50 – 2.75 = 1 pt
- 2.76 – 3.00 = 2pts
- 3.01 – 3.25 = 3pts
- 3.26 – 3.50 = 4pts
- 3.51 – 3.75 = 5pts
- 3.76 – 4.00 = 6pts

COMPLETION OF GENERAL EDCUATION COURSES (2 points):

- Points will be awarded ONLY if ALL General Education Requirements are completed with grades of "C" or above.

COMPLETION OF PREFERRED FINE ARTS/HUMANITIES/SOCIAL SCIENCES COURSE (1 point):

- 1 Point will be rewarded for a "C" or better in PHIL 102.

COMPLETION OF UNRESTRICTED PROGRAM COURES:

- BIOL 325= 1pt
- PHIL 302 = 1pt
- CHEM 220 = 1pt
- BIOL 197 or BIOL 224 = 1pt
- ENG 333 = 1pt
- PHIL 311 = 1pt

COMPLETION OF HIGHER LEVEL CHEMISTRY (3 points):

- Points will be awarded ONLY if CHEM 121 and CHEM 122 are completed with grades "C" or above.

PREVIOUS EDUCATION/ADVANCED DEGREES (2 points):

- Higher Education Degrees of an Associate Degree or Higher from an Accredited College or University will receive 2 points towards selection.

PREVIOUS EDUCATION/ADVANCED DEGREES (2 points):

- Higher Education Degrees of an Associate Degree or Higher from an Accredited College or University will receive 2 points towards selection.

CLINICAL LABORATORY SCIENCE (CLS) COURSE COMPLETION, CREDENTIAL, AND/OR WORK EXPERIENCE:

• Points will be awarded if the student has documentation of successful completion of an NSHE Phlebotomy Certification Program (5 points):

Note: if phlebotomy certificate was not awarded from an NSHE institution student must contact the Program Director of CLS for approval. Students must complete a phlebotomy program that provides clinical experience and preparation for a national credentialing exam from ASCP, AMT, or NCCT. Class must have been completed within 5 years of the MLT deadline date if not nationally credentialed.

• National Phlebotomy Credential or License (3 points):

Points will be awarded if the student has earned a phlebotomy credential or license from one of the following:

o ASCP (American Society for Clinical Pathology)
o AMT (American Medical Technologist)
o NCCT (National Center for Competency Testing)
o Nevada State Laboratory Assistant License

• Paid Medical Laboratory/Phlebotomy Experience (2 points):

Points will be awarded if student have completed at least six months of paid experience within the last two years. CSN form completed by employer indicating work responsibilities and length of employment must be supplied. The Medical Laboratory/Phlebotomy Form is available online at: https://at.csn.edu/sites/default/files/documents/clsworkexp.pdf.

Limited Entry Application For Admission to a Health Science Program

Return this form to:
Limited-Entry Office
Charleston Campus
Sort Code WCK206, Bldg K-216
6375 West Charleston Blvd
Las Vegas, NV 89146-1164
Phone: (702) 651-5633 Fax: (702) 651- 7593

Please print or type the information below. **NOTE: It is the applicant's responsibility to notify the Limited-Entry Office and Office of the Registrar of any name, address, or telephone changes**

Name_____ _____
Last First Middle NSHE Number

Address_____
Number Street Apt. Number

_____ **Telephone**_____
City State Zip Daytime

E-mail Address_____ **Alternate Telephone**_____

Proof of attendance of the Mandatory Limited Entry Workshop: Certificate of Attendance or quiz _____
Date I met with a Health Programs Advisor:_____ Cannot apply without date

Indicate the program to which you are applying for admission: **NOTE: A separate application must be completed for each program if applying to more than one program. You can only apply to one track within a program**

- ☐ Cardiorespiratory Sciences - BAS
- ☐ Dental Hygiene
  - ☐ AS ☐ BS
  - (For the BSDH program, you must be a Licensed Dental Hygienist and have an Associate Degree in Dental Hygiene)
- ☐ Diagnostic Medical Sonography
  - ☐ Cardiac/Vascular ☐ General/Vascular
- ☐ Health Information Technology
- ☐ Medical Coding
- ☐ Medical Laboratory Technician
- ☐ Medical Laboratory Scientist
- ☐ Medical Assisting
- ☐ Nursing (RN)
  - ☐ Regular Track ☐ Extended Track
- ☐ Nursing – Advanced Placement
  - (Must have a NV Practical Nursing license)
- Ophthalmic Dispensing
- Physical Therapist Assistant
- ☐ Practical Nursing
- ☐ Radiation Therapy Technology ☐ Las Vegas ☐ Reno
- ☐ Surgical Technologist ☐ Las Vegas ☐ Reno
- Veterinary Technology
- Veterinary Technology

Indicate the semester for which you are currently applying: ☐ Spring ☐ Summer ☐ Fall Year_____
Are you currently enrolled in a Limited Entry program? ☐ Yes ☐ No
Have you been enrolled in this program, or any other CSN Health Sciences Limited Entry Program? ☐ Yes ☐ No
If yes, refer to section E under TERMS of the Limited Entry Policy, to request Reinstatement/Re-Application
Are you transferring or have you transferred credits to CSN from another institution (including UNLV, UNR, NSC, TMCC, etc)?
☐ Yes ☐ No **If yes, please note that the evaluation of transfer credits is time-consuming. You must initiate and complete the "transfer of credits" process prior to the stated application deadline. To speed up this process, please use the TRANSFER CREDIT EVALUATION REQUEST form for Limited Entry Students, which can be found here: http://sites.csn.edu/health/pdf/transfercredit.pdf**

IT IS THE APPLICANT'S RESPONSIBILITY TO ENSURE THAT HIS/HER FILE IS COMPLETE AND THAT ALL NECESSARY DOCUMENTS ARE IN PLACE FOR EACH SELECTION PROCESS BEFORE THE STATED DEADLINE.

I certify that the above statements are true to the best of my knowledge.
I have read, understand and agree to comply with the Limited Entry Academic Programs Policy and Procedures.

Applicant's Signature_____ Date_____

Limited Entry Academic Programs Policy and Procedures

This policy becomes effective July 1, 2018, for admission to Limited Entry Health Programs and supersedes all previous policies.

The activities outlined in the document entitled "Ralph & Betty Engelstad School of Health Sciences Important Advising Information" is a part of the Limited Entry Academic Programs Policy and Procedures, and learners (students) are required to comply with the policies and procedures therein.

TERMS/CONDITIONS: Please read this policy very carefully. A signed and initialed copy of this policy must be submitted with your Limited Entry Application, the Completion Checklist, and all supporting documents/materials to the Limited Entry office on or before the specified program's application deadline date.

Prerequisites: The courses and/or documents established by the respective program as requirements for admission to the program.

- The program prerequisite courses will be used to calculate the GPA for selection into the program, and a letter grade of A, A-, B+, B, B-, C+ or C must be assigned to these courses.
- A letter grade of C- in a program prerequisite course is not acceptable.
- For purposes of calculating the GPA a "P, TP, S or TS" assigned to a course will be considered a "C" unless an official transcript is provided showing a different grade. If the course and grade can be verified as the course transferred to CSN, the grade on the official transcript will be used. Points will be awarded for "P, TP, S, or TS" if the course is listed on the Program's Selection Criteria Sheet as eligible to receive points for a grade of "C" or higher. If the Selection Criteria Sheet specifies a grade of "B" or higher, points will not be awarded for a grade less than a "B."
- Courses transferred in with a designation of "TR" on the MyCSN Transfer Credit Report will not be accepted unless an official transcript from the associated college is provided and the course and grade can be verified.
- Courses transferred in with a designation of "LELC" on the MyCSN Transfer Credit Report will not be accepted unless a copy of the signed substitution/waiver form, with all necessary signatures, including the Department Chair and Office of the Registrar is provided.
- The Limited Entry office is not responsible for any evaluation of courses including transfers, course equivalency, and substitution/waivers.
- GPA will be calculated using the number of credits that the course transfers in to the College of Southern Nevada. For example, earning a B in BIOL 223 at CSN (4 credits) equates to 12 points towards a cumulative GPA. A BIOL 223 course transferring in to CSN with a B (2.68 credits) equates to 8.04 points towards a cumulative GPA.
- Prerequisite courses cannot be waived.
- CLEP credits may be accepted for prerequisite courses, general education courses, and/or courses listed on the program's Selection Criteria Sheet. However, the CLEP course name and number of credits must appear on the CSN transcript or MyCSN Transfer Credit Report. CLEP scores/grades reported as a "P or TP", will be processed as

a grade of "C". If CLEP scores only are reported, the following will be used to determine the grade: A score of 20 to 50 will be processed as a grade of C; a score of 51 to 59 will be processed as a B; a score of 60 to 80 will be processed as an A.

- Proof of completion of all program prerequisites, activities, and assessments must be in the Limited Entry office on or before the application deadline date.

A. College Science Grades and the Proficiency Exam: Grades earned in science courses either at CSN or at other institutions.

- In order to receive consideration for courses/grades from institutions other than CSN, those courses/grades must have been evaluated by CSN's Office of the Registrar, and must appear on the MyCSN Transfer Credit Report, on or before the program's specified deadline.
- **Science courses may be no older than seven (7) years at the time of the application deadline, except for applications to Bachelor Degree Programs.**
  The seven (7) year expiration for sciences courses **may be waived** by the respective Program Director. If all minimum requirements are met, and a waiver form is submitted for the seven (7) year rule on a science course(s), this will render the application file as "complete" and allow it to be processed along with all other qualified and "complete" applications. **(A Waiver Form waives the requirement. This allows the application to be considered along with all other applications (as if the waived requirement did not exist). Please note that prerequisite courses cannot be waived).**
- If a learner (student) passed a college transferable science course(s) with a grade of "C" or higher, more than seven (7) years ago, the learner may opt to take a proficiency exam instead of retaking the course. If the learner passes the **NLN (National League for Nursing) Proficiency Exam in the "50th percentile"**, the learner's previous course(s) and grade(s) will be accepted for the Limited Entry program, with a waiver form from the Program Director.
- Only one attempt at the proficiency exam will be permitted per subject area (Anatomy and Physiology, Microbiology, and Pharmacology). Each program is responsible for managing the proficiency exam. The proficiency exam is valid for 7 years.

B. Application Deadline: Date determined by the Program Director or Department Chair by which the Limited Entry office ***must*** ***receive*** the Limited Entry Application packet, as defined in paragraph G. **Nothing will be accepted** after the application deadline date.

C. Application to Multiple Limited Entry Programs – Provisions/Exceptions: During each application cycle, learners may apply to as many Limited Entry programs as he/she wishes, as long as the program's requirements have been met. A learner may not apply to another Limited Entry program if currently enrolled in a Limited Entry program. Only the following exceptions, with Program Director written approval, are permitted:

- Learners may apply to the Medical Coding and Health Information Technology programs during the same selection cycle and may accept positions in both Limited Entry programs.
- Learners enrolled in the Medical Laboratory Technician program may apply to the Medical Laboratory Scientist program as long as they are in good standing in the MLT program, and have satisfied all prerequisites, activities and assessments necessary to apply to the MLS program. An exception memorandum form must be submitted. **(An Exception Memorandum makes an exception to the requirement which allows Limited Entry to accept and process the application. However, the application will only be considered after all other applications that have met all minimum requirements necessary to apply, have been considered. Please note that an exception cannot be made for prerequisite courses).**
- Learners must be in good standing and satisfy all prerequisite and program requirements for the desired program.

D. Application to Multiple Program Tracks: Learners enrolled in either track of the Diagnostic Medical Sonography program may be allowed, with a waiver form from the Program Director, to apply to the other track as long as the following conditions are met:

- The learner is in good standing in the final semester of the track for which he/she is currently enrolled.
- The learner has satisfied all prerequisite courses and program requirements for the other track.

E. Reinstatement/Re-application: Any learner who voluntarily withdraws or has been subject to administrative withdrawal/termination from a Limited Entry program, must apply for reinstatement/re-application to be accepted into the same or a different Limited Entry program with the following provisions:

- Approval of reinstatement or re-application will be determined by the Reinstatement committee.
- Re-application to the same program may result in a point(s) deduction as stated on the Selection Criteria Sheet. This deduction may be 10% of the maximum possible points for the first re-application, as determined by the Program Director.
- Applications may be subject to an additional 10% point deduction for each subsequent re-application. The number of points deducted must appear on the Selection Criteria Sheet for each respective program.
- A point(s) deduction waiver form obtained from the Program Director for documented medical reasons or extenuating circumstances must be submitted with the application packet.
- Assigning or waiving of point deduction(s) may occur at the time of selection.
- There may be other conditions for re-admission as determined by the Program Director.
- The CSN School of Health Sciences Student Reinstatement policy is adopted as part of the Limited Entry Academic Program Policy and Procedures, and learners are required to comply with the policies therein. The policy can be found on the CSN Health Sciences website.

F. Acceptance into Multiple Limited Entry Programs - Provisions/Exceptions:

- If a learner is qualified and offered a position into more than one Limited Entry program during a selection cycle, the learner can accept a position into only **ONE** program.
  Once a position in a Limited Entry program has been accepted, all other applications become null-and-void. The "Accept/Decline" form must be received by the Limited Entry office within 10 days of the date of the letter or the position is forfeited. A position will not be held for any reason.
- Upon successful completion of a Limited Entry Program, a learner is eligible to apply to another program.
- Learners may accept simultaneous/co-enrollment in Medical Coding and Health Information Technology.

G. Complete Application Packet: The Limited Entry office will only accept/process "Complete" Limited Entry Application packets. A "Complete" Limited Entry Application packet is defined as one submitted on or before the program's specified application deadline and consists of all of the following:

- A completed Limited Entry Application form with current date, name, address, telephone number, and program choice.
- The entire Limited Entry Academic Programs Policy and Procedures, to include learner's initials on each page, with learner's signature and date on the final page.
- Date of mandatory meeting with a Health Programs Advisor, which can be no more than two years prior the program's specified application deadline. Only the Director of Health Programs Advising and Limited Entry Admissions can write an exception memorandum to this requirement.
- All learners, regardless of degree pursuing (AS, AAS, and COA), must meet with a Health Programs Advisor prior to submitting their application(s) to the Limited Entry office. **Bachelor Degree learners may meet with a Health Programs Advisor or Faculty Advisor/Program Director.**
- A copy of the mandatory Limited Entry Workshop Certificate-of-Attendance or quiz demonstrating a minimum of 80%. The mandatory workshop must be completed no more than two years prior to the program's specified application deadline date. Learners that have not passed the quiz on two attempts or have not completed the

quiz within the two years must meet with the Limited Entry Coordinator. Only the Director of Health Programs Advising and Limited Entry Admissions can write an exception memo to this requirement.

- A completed, program-specific, Completion Checklist with all supporting documents. This form must be for the semester and program to which the learner is applying.
- Provider's note for medical and/or extenuating circumstances if re-application is approved by the Reinstatement committee.
- Proof of completion of all program prerequisites as listed on the Advisement Sheet, Selection Criteria Sheet and Completion Checklist.
- Results of appropriate pre-admission assessments, if applicable. Pre-admission assessments not taken at CSN must be transferred to CSN prior to the application deadline date.
- CSN formal evaluation of transcripts (MyCSN Transfer Credit Report) from other colleges, if applicable, including UNLV and NSC. Learner is responsible for ensuring MyCSN Transfer Credit Report reflects accurate course(s) and grade(s).
- Copy of signed substitution/waiver form, if applicable. This form must have all necessary signatures, including the Department Chair and Office of the Registrar.
- Standardized exception memorandum and/or waiver forms from the respective Program Director, if applicable. **Note: These forms are valid for the current selection cycle only.**
- All other program specific documentation listed on the Advisement Sheet, Selection Criteria Sheet and Completion Checklist.

H. Incomplete Application Packets: An "Incomplete" Application packet is one that does not contain all documents necessary to apply and/or does not meet minimum requirements as listed on the program's advising materials.

- Application packets that do not satisfy all program prerequisites will require an exception memorandum form from the Program Director making an exception for missing requirement(s) in order for an application to be processed. Program Directors are not, under any circumstances, obligated to provide an exception memorandum or waiver. **Note: An exception memorandum or waiver is only valid for the current selection cycle.**

I. The 3-Attempt Rule for Program Prerequisites:

- **If a prerequisite course has been taken three or more times, the highest of the first three attempts, including grades, withdrawals and audits, appearing in the learner's MyCSN** will be used for calculating the GPA.
- An exception memorandum form for the 3-Attempt-Rule may be obtained from the respective Program Director.
- The exception memorandum form to the 3-Attempt-Rule must indicate that the application will be considered only after all "complete" applications are considered and if adequate space in the program is available.
- A waiver form to the 3-Attempt-Rule must indicate that the application will be considered along with the all other "complete" applications.
  The exception memorandum or waiver form to the 3-Attempt-Rule must be included and submitted with the Limited Entry Application.
- The 3-Attempt Rule does not apply to science courses older than seven (7) years.

Appendix B: Program Selection

LIMITED ENTRY SELECTION PROCESS:

The Limited Entry Selection Process is utilized to accept learners into the first semester of a Limited Entry program. The number of learners accepted into a Limited Entry program is determined by the respective Program Director. A selection committee for each program will review the application files and verify and/or confirm eligibility and points awarded. If the number of applications is less than the maximum number allowed based on the program's specification, all eligible and qualified applications will be accepted. The items for points, in this case, will not be verified or processed.

A. The Limited Entry Application and Completion Checklist

- These forms are available on-line on the CSN Health Sciences website.
- The application packet ***must be received*** **in the Limited Entry office on or before the program's specified application deadline date**.
- Complete application packets submitted on or before the program's application deadline and/or applications with a waiver form will be considered first.
- Applications that contain an exception memorandum form will be considered only after all "complete" applications are considered and if the program has adequate space available to accommodate additional learners.

B. If there are available positions remaining in the program after all applications have been accepted, then those applications not satisfying program prerequisites will be ranked and considered, and the next highest ranked application will be selected for entry into the program. A learner who has not successfully completed all sections of the pre-admission assessments with the minimum cut-off scores will earn 0 points for selection in the category for the pre-admission assessments. If **all prerequisites are not** completed successfully, with grades identifiable on the CSN transcript at the time of the application, then 0 points will be awarded for GPA.

C. Current program prerequisites, minimum acceptable grades, and deadline dates to apply are posted on the Advisement Sheets, which are available in the Health Programs Advising office and online. Advisement Sheets will be available one year prior to the application deadline. If advising materials are not approved by the Program Director and returned to the Health Programs Advising office within 15 working days prior to the program's application deadline, the current advising materials will be used until the next selection cycle. Once advising materials become public, they cannot be altered until the next selection cycle. CSN may modify prerequisites with a minimum of one year's notice. Actual program courses are subject to revision and will have no impact on program admission.

D. Program Directors may issue an exception memorandum form for prerequisite requirements if they deem this necessary to fill available positions. An exception memorandum form is **valid for the current selection only**, and must specifically address/justify each prerequisite that has not been met. A Program Director may not submit exception memorandums for all program prerequisites for any learner. It is the responsibility of the Program Director to ensure that the conditions listed on the exception memorandum form are satisfied. If the learner does not meet the conditions, he/she may be administratively withdrawn and will be required to apply for reinstatement/re-application during a later enrollment cycle.

E. After the initial processing of all application files, a selection committee will review the files to ensure accuracy of content and make the final selection of applicants into the program as well as an alternate list. Learners with equal points will be ranked by a computerized random selection.

F. Each learner who applies on or before the application deadline will be notified in writing of the results of the selection process.

G. If a learner is not admitted into a program, the current application is considered closed. **Waiting lists are not maintained. Learners who reapply must meet current requirements and reproduce all supporting documents. The Limited Entry office does not retain prior applications or supporting documents.**

H. **Accepting/Declining an offered Position in a Limited Entry Program:** Each learner who is offered a position in a Limited Entry program must:

- Return a signed "Accept/Decline" form indicating whether the learner accepts or declines the position within 10 days of the date of the acceptance letter to the Limited Entry office. In the event that a signed "Accept/Decline" form is not received in the Limited Entry office by the specified date, the position will be offered to an alternate.
- Attend orientations/events at the time scheduled by the respective program or the position may be offered to an alternate. Learners arriving late to the program-specific orientation, may not be allowed to attend, therefore forfeiting their position in the program.
- For programs ***with*** mandatory orientations: Learners who sign an "Accept/Decline" form indicating they are accepting a position in a Limited Entry program and then do not ***attend*** the mandatory orientation(s) will be administratively withdrawn, and be required to reapply through the Limited Entry office.
- For programs ***without*** mandatory orientations: Learners who sign an "Accept/Decline" form indicating they are accepting a position in a Limited Entry program and then do not ***enroll*** in program courses will be administratively withdrawn, and be required to reapply through the Limited Entry office.

I. Learners will have 15 days from the date of the notification letter to appeal the result of the selection. The appeal must be in writing, addressed to the Dean of the School of Health Sciences and contain a detailed explanation for the appeal. The Dean will respond within 10 working days.

Janice L. Glasper, M.Ed., RDMS, RVT,
Interim Dean/Health Sciences

7/1/18
Date

_____ _____
Learner's Signature **Date**

		RATING			
PROGRAM OUTCOMES	**Criterion**	0-Does not Meet Standard (<75% performance standard)	1-Meets Standard (75% performance standard)	2-Above Standard (above 80% performance standard)	3-Exceeds Standard (above 90% performance standard)
Assess and correlate clinical and/or laboratory data through the application of theory and principles.	After instruction, correctly applies theory and principles to assess and correlate clinical and laboratory data.	• Does not correctly apply theory and principles to laboratory data	• Applies theory and principles to laboratory data with at least 75% accuracy	• Applies theory and principles to laboratory data with at least 80% accuracy	• Applies theory and principles to laboratory data with > 90% accuracy
Select appropriate courses of action in accordance with established laboratory procedures.	After instruction, selects appropriate materials and samples for testing procedures	• *Does not follow established procedures* • *Requires continual guidance* • *Takes no initiative to research when uncertain* • *Incorrectly selects materials and testing samples <75% accuracy* • *Does not accomplish task(s) in time on task allotment*	• *Follows established procedures* • *Requires frequent guidance* • *Rarely takes initiative to use available resources to answer questions* • *Correctly selects materials and testing samples with at least 75% accuracy* • *Accomplishes task(s)in time on task allotment 75% of the time*	• *Follows established procedures* • *Requires minimal guidance* • *Occasionally takes initiative to use available resources to answer questions* • *Correctly selects materials and testing samples with at least 80% accuracy* • *Accomplishes task(s)in time on task allotment >80% of the time*	• *Follows established procedures* • *Requires little or no guidance* • *Often takes initiative to use available resources to answer questions* • *Correctly selects materials and testing samples >90% accuracy* • *Works in an efficient manner as to meet or exceed given time on task allotment*
	After instruction, processes and/or prepares controls	• *Does not follow established procedures* • *Requires continual guidance*	• *Follows established procedures* • *Requires frequent guidance* • *Rarely takes initiative to use available*	• *Follows established procedures* • *Requires minimal guidance* • *Occasionally takes initiative to use*	• *Follows established procedures* • *Requires little or no guidance*

		• *Takes no initiative to research when uncertain* • *Incorrectly processes/prepares controls: <75% accuracy* • *Does not accomplish task(s) in time on task allotment*	*resources to answer questions* • *Correctly processes/prepares controls with at least 75% accuracy* • *Accomplishes task(s)in time on task allotment 75% of the time*	*available resources to answer questions* • *Correctly processes/prepares controls with at least 80% accuracy* • *Accomplishes task(s)in time on task allotment >80% of the time*	• *Often takes initiative to use available resources to answer questions* • *Correctly processes/prepares controls with >90% accuracy* • *Works in an efficient manner as to meet or exceed given time on task allotment*
	After instruction, processes and/or prepares equipment and instruments	• *Does not follow established procedures* • *Requires continual guidance* • *Takes no initiative to research when uncertain* • *Incorrectly processes/prepares equipment: <75% accuracy* • *Does not accomplish task(s) in time on task allotment*	• *Follows established procedures* • *Requires frequent guidance* • *Rarely takes initiative to use available resources to answer questions* • *Correctly processes/prepares equipment with at least 75% accuracy* • *Accomplishes task(s)in time on task allotment 75% of the time*	• *Follows established procedures* • *Requires minimal guidance* • *Occasionally takes initiative to use available resources to answer questions* • *Correctly processes/prepares equipment with at least 80% accuracy* • *Accomplishes task(s)in time on task allotment >80% of the time*	• *Follows established procedures* • *Requires little or no guidance* • *Often takes initiative to use available resources to answer questions* • *Correctly processes/prepares equipment with >90% accuracy* • *Works in an efficient manner as to meet or exceed given time on task*
	After instruction, processes and/or prepares reagents	• *Does not follow established procedures* • *Requires continual guidance* • *Takes no initiative to research when uncertain*	• *Follows established procedures* • *Requires frequent guidance* • *Rarely takes initiative to use available resources to answer questions*	• *Follows established procedures* • *Requires minimal guidance* • *Occasionally takes initiative to use available resources to answer questions*	• *Follows established procedures* • *Requires little or no guidance* • *Often takes initiative to use available resources to answer questions*

		• *Incorrectly processes/prepares reagents: <75% accuracy* • *Does not accomplish task(s) in time on task allotment*	• *Correctly processes/prepares reagents with at least 75% accuracy* • *Accomplishes task(s)in time on task allotment 75% of the time*	• *Correctly processes/prepares reagents with at least 80% accuracy* • *Accomplishes task(s)in time on task allotment >80% of the time*	• *Correctly processes/prepares reagents with >90% accuracy* • *Works in an efficient manner as to meet or exceed given time on task*
	After instruction, processes and/or prepares specimens	• *Does not follow established procedures* • *Requires continual guidance* • *Takes no initiative to research when uncertain* • *Incorrectly processes/prepares specimens: <75% accuracy* • *Does not accomplish task(s) in time on task allotment*	• *Follows established procedures* • *Requires frequent guidance* • *Rarely takes initiative to use available resources to answer questions* • *Correctly processes/prepares specimens with at least 75% accuracy* • *Accomplishes task(s)in time on task allotment 75% of the time*	• *Follows established procedures* • *Requires minimal guidance* • *Occasionally takes initiative to use available resources to answer questions* • *Correctly processes/prepares specimens with at least 80% accuracy* • *Accomplishes task(s)in time on task allotment >80% of the time*	• *Follows established procedures* • *Requires little or no guidance* • *Often takes initiative to use available resources to answer questions* • *Correctly processes/prepares reagents with >90% accuracy* • *Works in an efficient manner as to meet or exceed given time on task*
Evaluate and perform full range of clinical laboratory procedures, including quality assurance and quality control procedures.	After instruction and given quality control and other related information, evaluate the acceptability of quality control data according to established procedures.	• *Does not correctly evaluate quality control data* • *<75% accuracy*	• *Able to correctly evaluate the acceptability of quality control data* • *Minimum 75% accuracy*	• *Able to correctly evaluate the acceptability of quality control data* • *Able to Minimum 80% accuracy*	• *Able to correctly evaluate the acceptability of quality control data* • *Minimum 90% accuracy*

	After instruction, performs full range of clinical laboratory procedures.	• *Does not follow established procedures* • *Requires continual guidance* • *Takes no initiative to research when uncertain* • *Incorrectly performs laboratory testing: <75% accuracy* • *Does not accomplish task(s) in time on task allotment*	• *Follows established procedures* • *Requires frequent guidance* • *Rarely takes initiative to use available resources to answer questions* • *Correctly performs laboratory testing with at least 75% accuracy* • *Accomplishes task(s)in time on task allotment 75% of the time*	• *Follows established procedures* • *Requires minimal guidance* • *Occasionally takes initiative to use available resources to answer questions* • *Correctly performs laboratory testing with at least 80% accuracy* • *Accomplishes task(s)in time on task allotment >80% of the time*	• *Follows established procedures* • *Requires little or no guidance* • *Often takes initiative to use available resources to answer questions* • *Correctly performs laboratory testing with >90% accuracy* • *Works in an efficient manner as to meet or exceed*
	After instruction and given related information, evaluate new procedures/ instrumentation.	• *Unable to evaluate procedures or instrumentation* • *<75% score on in-class scenarios*	• *Able to evaluate procedures or instrumentation* • *Minimum75% score on in-class scenarios*	• *Able to evaluate procedures or instrumentation* • *Minimum 80% score on in-class scenarios*	• *Able to evaluate procedures or instrumentation* • *Minimum 90% score on in-class scenarios*
Differentiate and resolve technical, instrument, and/or physiologic causes of unexpected or abnormal data.	After instruction and given patient and other related information, discriminates between technical error and physiological abnormalities.	• *Does not recognize sources of error in testing* • *<75% accuracy*	• *Able to recognize sources of error in testing* • *Minimum 75% accuracy*	• *Able to recognize sources of error in testing* • *Minimum 80% accuracy*	• *Able to recognize sources of error in testing* • *Minimum 90% accuracy*

	After instruction and given patient and other related information, takes corrective action according to established procedures.	• *Does not take corrective action*	• *Takes corrective action if indicated* • *Minimum 75% accuracy*	• *Takes corrective action if indicated* • *Minimum 80% accuracy*	• *Takes corrective action if indicated* • *Minimum 90% accuracy*
	After instruction and given patient and other related information, recognize and report normal and abnormal test results according to established procedures.	• *Does not recognize normal from abnormal results* • *Does not correctly report test results* • *<75% accuracy*	• *Able to recognize normal from abnormal results* • *Correctly reports test results* • *Minimum 75% accuracy*	• *Able to recognize normal from abnormal results* • *Correctly reports test results* • *Minimum 80% accuracy*	• *Able to recognize normal from abnormal results* • *Correctly reports test results* • *Minimum 90% accuracy*
	After instruction and given patient and other related information, evaluate data to determine related disease states.	• *Does not recognize related disease states* • *<75% accuracy*	• *Able to recognize related disease states* • *Minimum 75% accuracy*	• *Able to recognize related disease states* • *Minimum 80% accuracy*	• *Able to recognize related disease states* • *Minimum 90% accuracy*

Assessment of Learner Competency using Classroom Assessment Technique (CAT) 39: Process Analysis

Presenters: Patricia Armour, PhD, MPA, MT(ASCP); Shirley Cruzada, Ed.D, MS, MT(AMT); Heidi Schneiter, M.Ed., MT(ASCP); Michael Simpson, MS, MT(ASCP)

College of Southern Nevada 6th Annual Poster Fair on Student Success, January 14, 2019

Introduction

Classroom Assessment Techniques (CATs) provide a formative assessment strategy for educators to determine how well learners comprehend lesson points or course material. Angelo and Cross (1993) documented multiple techniques for assessing course-related knowledge and skills. They stated that "the purpose of classroom assessment is to empower both teachers and their students to improve the quality of learning in the classroom." (p.4).

The three steps in the process of implementing CATs in the classroom include:

1. Plan: Select a class and associated CAT. Keep it simple so that no additional burden is placed on the instructor or learner.
2. Implement: Clearly explain the process to learners. Collect and analyze responses as soon as possible.
3. Respond: Provide timely feedback to learners and identify how CAT information will be used to improve learning for themselves and for future classes.

This poster presentation utilized CAT 39: Process Analysis to assess the competency of Medical Laboratory Science (MLS) learners enrolled in the Fall 2017 Hematology II and Research Methods classes. Process Analysis requires the learner to keep a record of actual steps taken to carry out a specific assignment; analyze the record for steps that are missing or unnecessary; and report findings back to the class and discuss areas for improvement.

Poster Presentation Objectives:

1. Describe the use of Process Analysis in the MLS program.
2. Discuss the application of real world laboratory techniques for improving learner skills.
3. Recognize the importance of accurate reporting for data validity in both research and the clinical setting.
4. Describe the utilization of a standard rating system for measuring learner assessment.

Background

The College of Southern Nevada (CSN) MLS program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). The agency provides accreditation standards that include evaluation of instructional delivery, job placement rates, and results of licensing examinations. CSN requires programs to perform assessments to evaluate their effectiveness. Aziz and Tille (2018) state that "Program assessment should focus on assessing student learning and experience to determine whether students have acquired the skills, knowledge, and competencies associated with the program goals and objectives." (p.9).

CAT 39 Process Analysis was chosen to assess the competency of MLS learners enrolled in the Fall 2017 Hematology II and Research Methods courses. The learners had previously completed a Hematology I course and had just finished a two-week Hematology clinical rotation. The learners participated in data gathering for a Hematology research project, which required correct application of

principles for identification and enumeration of human blood cells. The project also provided an opportunity for learners to understand the importance of obtaining valid data for a research project.

Method

The research project tracked changes in microscopic leukocyte differential counts and cellular morphology in a blood sample collected in ethylenediaminetetraacetic acid (EDTA), and stored at room temperature for 5 days. The learners used the following process:

- A single EDTA sample was collected from a volunteer on Day 1 and stored at room temperature until Day 5.
- Multiple slide sets were prepared from the EDTA sample at the following time periods after collection: Immediate, 1 hour, 3 hours, 6 hours, 8 hours, 10 hours, 12 hours, 24 hours, 48 hours, 72 hours, 96 hours, and 120 hours. Each slide set contained 12 slides (one for each time period).
- All slides were numbered with a unique slide set number and character, so students were "blinded" to the slide preparation day and time.
- Each learner performed a routine 100 cell manual differential on the 12 wedge prepared, Wright stained slides in their individual slide set.
- Each learner received prior instruction on the manual differential procedure along with an illustrated guidebook for standardization of cell types.
- Each learner completed a standardized manual differential report form for each slide.
- The manual differential report forms were reviewed by the instructor for accuracy, and returned back to the learner with notes for corrections. The learner corrected the reports and returned them to the instructor. The areas for improvement were discussed during class time.

Rubric

A rubric was created to assess each leaners' competency for accurately completing the manual differential report form. The ability to accurately perform and report all components of a manual differential is a basic hematology skill utilized routinely in a clinical setting for patient screening and diagnosis. The rubric consisted of six criteria shown in the manual differential report form in Figure 1. The instructor reviewed each differential report from each student, and evaluated if all six criteria were met. If data was missing or calculated incorrectly, the instructor circled the inaccurate information. The forms were returned to the learners for correction and discussion.

Data collection and analysis

Following correction and completion of all manual differential report forms, the instructor entered the data into an Excel spreadsheet. Each learner had a set of 12 slides that were prepared within the time periods discussed above. Each learner performed a manual differential on each of the 12 slides. Each manual differential report was reviewed to determine if each of the six competency criteria in Figure 1 had been met initially. A response of Yes or No was entered in the spreadsheet for each criteria for each learner. A Yes indicated the criteria was completed correctly the first time and a No indicated the initial criteria was either missing or calculated incorrectly.

The average percent correct was calculated for each of the six criteria for each student and entered on the spreadsheet shown in Table 1. The average percent correct for each learner was used for assessing competency. A 75% performance standard was used as a benchmark indicating that the learner correctly applied hematology theory and principles to laboratory data with 75% accuracy.

Additionally, the rubric data was utilized to calculate the average percent correct for all eight learners within each individual criteria. This data was analyzed to assess Hematology program outcomes using the standardized table shown in Table 2. The standards used in the program outcomes were established by the Medical Laboratory Program Director, Ms. Heidi Schneiter, to meet CSN and NAACLS assessment requirements.

Results

Learner competency: Table 1 and Figure 2 provide visual depictions of the competency results for the manual differential criteria. As shown in Figure 2, all eight MLS learners (100%) met or exceeded the 75% performance standard competency benchmark. While a 75% standard would be acceptable in an academic standard, it would not be acceptable in a clinical setting. A 75% competency standard would indicate that 1 out of 4 patients may have received an inaccurate test result. The expectation in laboratory testing is 100% accuracy.

Additionally, review of the data in Table 1 shows a number of highlighted criteria areas for individual learners that were below the 75% standard. Three of eight learners had errors in ensuring that the total differential count added up to 100, and also in correct reporting of the RBC morphology. Missing or incorrectly calculated data has an impact on clinical laboratory testing, and also on the data validity for a research project.

Program Outcomes: Table 2 provides visual depiction of the Hematology program outcome assessment. All eight learners met or exceeded the 80% performance standard for all six manual differential criteria, which is above the benchmark standard for an academic setting. In a clinical setting, staff would be expected to be closer to a 100% performance standard.

Conclusion

The MLS program has routinely used a variety of laboratory reports and unknowns to assess learner competency. Each required keeping a record of steps performed, and analyzing the final result to determine any missing or unnecessary steps. Laboratory test accuracy requires strict adherence to the approved standard operating procedure. The CAT 39 Process Analysis designation provided a nationally recognized terminology for those activities already performed in the MLS program. Reviewing the data based on assessment, rather than grading, provided an opportunity to identify specific areas for improvement for both the learners and the instructors.

While learner competency and program outcome assessment met the CSN 75% benchmark standard, the data revealed some weaknesses among the learners in the performance of a manual differential and acceptable documentation, which are basic hematology skills. Most hematology differential testing in the real world is performed using a counter that attaches to a computer. The computer keeps track of total cell count and alerts the user if required information is missing. The documentation method used for this project was “old school” paper and pen, which may have been unfamiliar to the students. However, all clinical laboratories are required to have a backup plan in place for when the computer system is inoperable. These backup systems may be manual paper and pen written systems. The importance of completely entering and calculating all laboratory test data is a skill that should be emphasized in all MLS programs. Additionally, this project allowed learners to see the importance of accurate data when performing a research project. Missing or incorrectly calculated data can impact the validity of a research study.

Implementation of CAT 39 required minimal instructor time because the process was already in use. Review of the data analysis provided valuable feedback to the learners who could then use the information to improve their clinical real world hematology technical skills. The Hematology instructors could use the data to modify future instruction to emphasize the complete entry of all six manual differential criteria on lab reports in both the academic and clinical real world setting.

References

Angelo, T.A. & Cross, K.P. (1993). *Classroom Assessment Techniques: A Handbook for College Teachers* (2nd Ed.). San Francisco: Jossey-Bass.

Aziz, H.A. & Tille, P. (2018). A Comprehensive Assessment Plan for Medical Laboratory Science Programs. *American Society for Clinical Laboratory Science*. DOI:https://doi.org/10.29074/ascls.118.000190

Figure 1 Manual Differential Report Form and Competency Criteria

Figure 1 Manual Differential Report Form and Competency Criteria

Learner Name _____

Slide # _____ Circle one character % ? # $ = +
O X > * @ ^

Differential

Cell Type	Count	Sub-category count
Segmented neutrophil	_____	
Neutrophil degranulation		_____
Neutrophil demargination		_____
Neutrophil vacuoles		_____
Demargination + vacuoles		_____
Pelger-Huet Like		_____
Band neutrophil	_____	
Lymphocyte	_____	
Variant lymphocyte	_____	
Monocyte	_____	
Mono w/vacuoles		_____
Mono w/lobulation		_____
Mono w/both		_____
Eosinophil	_____	**RBC Morphology**
Basophil	_____	**Normal**
Smudge cells	_____	**Other (1+ to 4+)**
Unclassifiable	_____	
		Platelet estimate _____
Total (Bold cell types)	**100**	**Platelet Morphology**
		Normal
		Other: Giant/Large Aggregates

Learner Competency Criteria

1. Slide identified correctly? Yes or No response
Both the Slide # and character must be present for a Yes response

2. Differential Count added up to 100? Yes or No response
The final total of the BOLDED cell types must add up to 100 for a Yes response

3. RBC morphology reported correctly? Yes or No response
Circle Normal or Other (not both) for a Yes response

4. Abnormal RBC morphology graded correctly? Yes or No response
Graded response required if RBC morphology normal NOT circled

5. Platelet estimate calculated correctly? Yes or No response
 # platelets per oil immersion field reported for Yes response

6. Platelet morphology reported correctly? Yes or No response
Circle either Normal or Other (not both) for Yes response

Table 1 Manual Differential Competency Criteria and Assessment Data

#	COMPETENCY CRITERIA	Learner 1 % correct*	Learner 2 % correct*	Learner 3 % correct*	Learner 4 % correct*	Learner 5 % correct*	Learner 6 % correct *	Learner 7 % correct*	Learner 8 % correct*	Average % correct per Criteria (Used for Program Outcome rating assessment)
1	Slide identified correctly?	100	92	100	100	100	92	67	92	93
2	Differential Count added up to 100?	92	50	67	67	92	100	92	92	82
3	RBC morphology reported correctly?	50	100	67	100	100	100	67	86	84
4	Abnormal RBC morphology graded correctly?	50	87	83	50	100	100	100	100	84
5	Platelet estimate calculated correctly?	100	75	100	100	92	100	100	100	96
6	Platelet morphology reported correctly?	83	50	83	100	83	92	67	83	80
	Average % correct by learner (Used for assessing learner competency)	79	76	83	86	95	97	82	92	

*% correct = # Yes responses for each criteria/total differential responses for each criteria

Highlighted cells reflect individual learner competency below 75% Performance Standard

Figure 2 MLS Hematology II Learner Competency Assessment

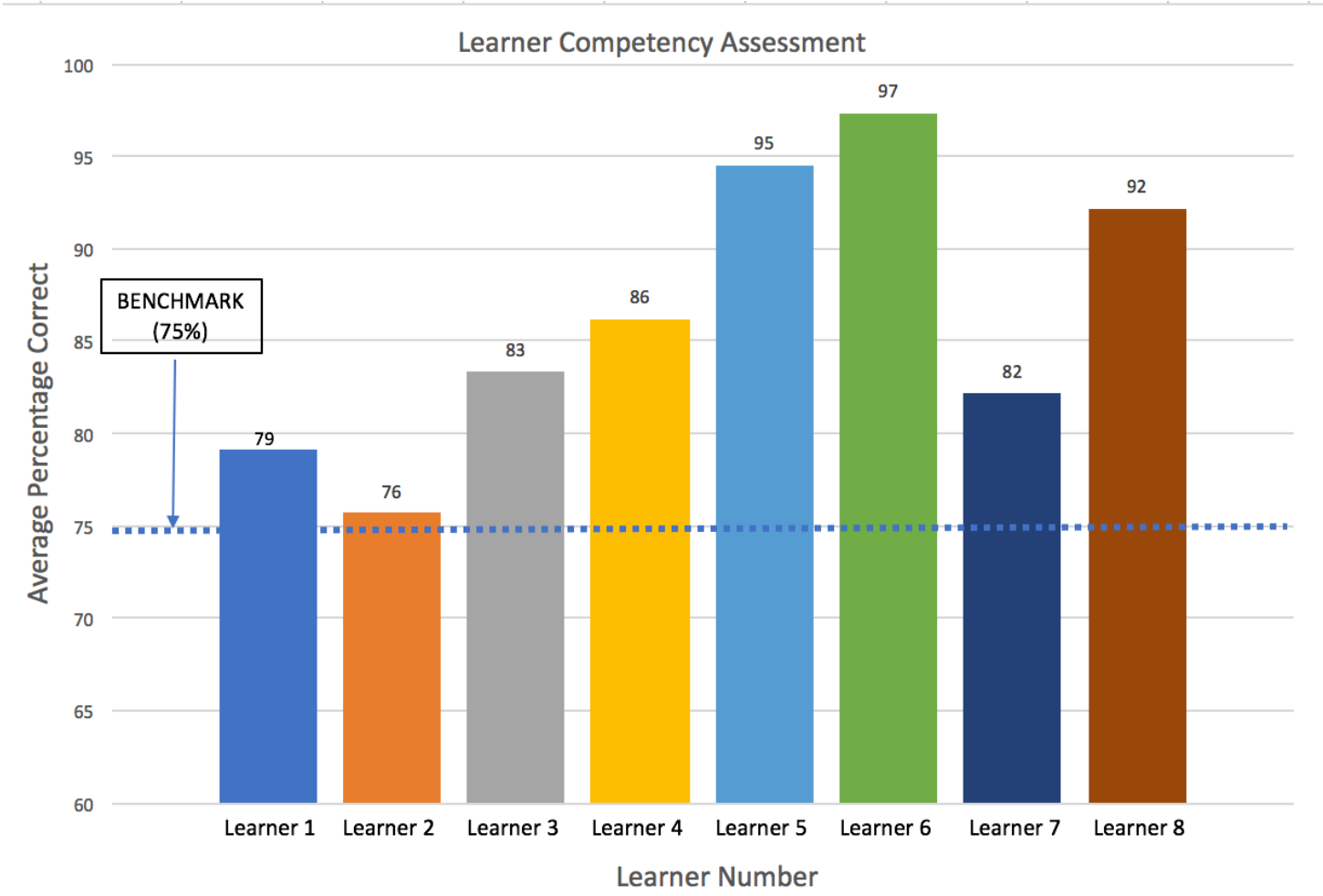

Table 2 MLS Hematology II Program Outcome Assessment

Medical Laboratory Science Hematology II Program Outcome Assessment	
Program Outcome	Assess and correlate clinical and/or laboratory data through the application of theory and principles.

Manual Differential Criterion	After instruction, correctly applies theory and principles to correctly interpret clinical, morphological, and test results to facilitate Identification and discrimination of human blood cells

Criterion Rating	**Benchmark = 75% Performance Standard**
0	Below 75% performance standard. Does not correctly apply theory and principles to laboratory data
1	Meets 75% performance standard (Benchmark). Applies theory and principles to laboratory data with 75% accuracy
2	Above 80% performance standard. Applies theory and principles to laboratory data with at least 80% accuracy
3	Exceeds 90% performance standard. Applies theory and principles to laboratory data with 90% or greater accuracy

Rating	**0 (<75%)**	**1 (75-79%)**	**2 (80-89%)**	**3 (90-100%)**
# of criteria within each rating standard	0	0	4	2

All 8 learners met or exceeded the 80% performance standard for all 6 manual differential competency criteria

COLLEGE OF SOUTHERN NEVADA

BAS-Medical Laboratory Scientist

ANNUAL ASSESSMENT REPORTING FORM

Report of Academic Year: 2017-2018
Department: Dental Sciences, Diagnostic Evaluation and Rehabilitation Services
Date Report Completed: 2/26/19
Completed By: Heidi Schneiter
Contact Email: heidi.schneiter@csn.edu
Contact Phone: 702-651-5864

PROGRAM STUDENT LEARNING OUTCOME ACHIEVEMENT
Reporting Cohort
Total number of students used for determining and reporting achievement of program SLOs: The total number of students used in this report is 18. The program performs assessment based on laboratory discipline. Due to the small numbers in the MLS cohorts, multiple cohorts have been used in the assessment.
Program SLOs and Assessment Artifacts
List the program SLOs and report the data collected from the assessment artifacts to show achievement of SLOs. 1. Assess and correlate clinical and/or laboratory data through application of theory and principles. 2. Select appropriate courses of action in accordance with established laboratory procedures. 3. Evaluate and perform full range of clinical laboratory procedures, including quality assurance and quality control procedures. 4. Differentiate and resolve technical, instrument, and/or physiologic causes of unexpected or abnormal data. **Assessment Artifacts & Measures** • Case studies: Adapted question matrix • Laboratory Reports: Checklists • Practical Examinations & Quizzes: Adapted question matrix & Checklists • Clinical Practicum: Direct Observation Checklists **Numeric Performance Indicators** Assessment is based on a 4 point scale, 0-3, which indicates the following: 3: Exceeds Standard 2: Above Standard 1: Meets Standard 0: Does not meet standard

MLS Data Collection Form Hematology II 2017 Cohort Student Id: Cohort 2016 & 2017

	PROGRAM OUTCOMES	Criterion	Rating	Ave. Rating
1	Assess medical laboratory results through the application of theory and principles; and correlation of other clinical or laboratory data in all clinical areas **(In Class Case Studies)** CLS 448 Exam I and Exam 5	After instruction, correctly applies theory and principles to assess and correlate clinical and laboratory data to facilitate identification and discrimination of various hematologic malignancies and hemostasis disorders		
Average rating for Outcome 1			2.4	
2	Selects appropriate courses of action in accordance with established laboratory procedures			
2a	CLS 449 Exam 1 CLS 449 LR 1 Hematology Math	After instruction, correctly calculates hematologic parameters		
2b	CLS 449 LR 3 Hematology automation CLS 449 LR 2 CBC	After instruction, correctly reads and interprets results of basic hematologic test methodologies		
2c	CLS 449 Exam 3 CLS 449 LR 9 Hemostasis instrumentation CLS 449 Quiz 4	After instruction, correctly reads and interprets results of basic hemostasis test methodologies		
Average rating for Outcome 2			2.4	
3	Evaluate and perform full range of clinical laboratory procedures, including quality assurance and quality control.			
3a	CLS 449 LR 4 QA CLS 449 LR 5 Westgard rules	After instruction and given quality control and other related information, evaluate the acceptability of quality control data according to established procedures.		
3b	CLS 449 Quiz 2 CLS 449 Quiz 3	After instruction, correctly identifies abnormal cells of various leukemias, anemias, and non-malignant white blood cell disorders		
3c	CLS 449 Quiz 1	After instruction, correctly identifies normal and abnormal erythrocyte morphology		
Average rating for Outcome 3			2.3	

1

MLS Data Collection Form Hematology II 2017 Cohort Student Id: Cohort 2016 & 2017

4	Evaluate laboratory data to recognize and report clinically relevant results according to established procedures.			
4a	CLS 448 Exam 4	After instruction and given patient and other related information, differentiate and resolve technical, instrument and/or physiological causes of unexpected or abnormal data		
4b	CLS 448 Exam 3	After instruction and given patient and other related information, recognizes normal and abnormal test results according to established procedures.		
4c	CLS 448 Exam 2	After instruction and given patient and other related information, evaluates data to determine related disease states.		
Average rating for Outcome 4			2.3	

NOTES:

Performance criterion is based on performance rubric. Student achievement is scored in terms of exceeds standard (3); above standard (2); meets standard (1); does not meet standard (0). **Achieved SLO:** Average score 2-3

Partially Achieved SLO: Average scores 1-2: **Not Achieved SLO:** Average score 0-1

Based on assessment data for this evaluation:

Outcome 1: Achieved: 91%

Partially Achieved: 9%

Outcome 2: Achieved: 85%

Partially Achieved: 12%

Not Achieved: 3%

Outcome 3: Achieved: 85%

Partially Achieved: 15%

Outcome 4: Achieved: 91%

Partially Achieved: 6%

Not Achieved: 3%

Meaning and Use of Findings

1. Describe your interpretation (meaning) of overall student performance and their achievement of outcomes.

Evaluation of the above results, the majority of students performed above the standard for each of the programmatic outcomes. It was also noted that students with outcome achievement of less than 2 for more than two program outcomes, were not successful in the program and were removed for unsatisfactory academic performance.

Faculty is satisfied with the results, and will continue to monitor.

2. Indicate how the assessment findings will be used to improve student success.

Faculty will continue to monitor student achievement and alignment with national standards for the profession.

PREVIOUS ACTION PLAN FOR IMPROVEMENT

Report your 2016-2017 action plan activity results (review your 2016-2017 annual assessment report)

Restructure 3-year plan

Create plan in order to correlate didactic, clinical rotation, and certification board examination sub-section scores more efficiently.

Program has incorporated didactic and clinical rotation with this report. Program will add certification board examination sub-section scores moving forward.

Create discipline review courses

Curriculum approval was granted for five discipline specific review courses. All CLS faculty are completing course development for delivery in Spring 2019. Effectiveness of courses will be evaluated in future assessment cycles.

Create upper level Urinalysis & Body Fluids course

Curriculum approval was granted for Urinalysis & Body Fluids II course which was offered beginning in Fall 2017. Michael Simpson was responsible for the curriculum proposal and course creation. Effectiveness of the course will be evaluated in future assessment cycles.

COURSES REVIEWED DURING 2017-2018
For each course reviewed (indicated in your 3-year assessment plan): a) describe the review process, b) provide an overall summary pertaining to student learning outcome achievement, and c) discuss what course changes were made and how the changes will improve student success (e.g., revision of student learning outcomes, curriculum, assessment artifacts, etc.).
Hematology II (Includes CLS 448 & 449 & 497) Review of data showed an average rating for this course as follows: Outcome 1: 2.4 of 3 Outcome 2: 2.4 of 3 Outcome 3: 2.3 of 3 Outcome 4: 2.3 of 3 Data was compiled based on evaluation of case studies, practical examinations and associated quizzes. Checklists are used for direct observation of skills. An adapted question matrix is used to determine questions for quizzes and examinations which covers basic to complex level questions. Evaluation of the above results, students performed above the standard for each of the programmatic outcomes. Faculty is satisfied with the results, and will continue to monitor. Review and revision of student learning outcomes to align with current curriculum content and assessment initiatives. **Microbiology II (Includes CLS 476 & 477 & 495)** Review of data showed an average rating for this course as follows: Outcome 1: 2.8 of 3 Outcome 2: 2.8 of 3 Outcome 3: 2.8 of 3 Outcome 4: 2.8 of 3 Data was compiled based on evaluation of case studies, practical examinations and associated quizzes. Checklists are used for direct observation of skills. An adapted question matrix is used to determine questions for quizzes and examinations which covers basic to complex level questions. Evaluation of the above results, students performed above the standard for each of the programmatic outcomes. Faculty is satisfied with the results, and will continue to monitor. Review and revision of student learning outcomes to align with current curriculum content and assessment initiatives.

Action Plan for Improvement					
1. Place an X in the appropriate boxes to identify any gaps or areas for improvement found during your assessment review. 2. Indicate planned activities to address the gaps or areas for improvement, the person(s) assigned tasks to complete the activities, the activity steps or process that needs to take place, and a target date for completion (you will report on these next cycle).					
1. Assessment Review Findings:					
Curriculum Content	Teaching Strategies	Curriculum Resources	Assessment Measure(s)	Learning Environment	Collaboration with Student Support Services
X		X	X		

2. Planned Activities	Person(s) Responsible	Action Steps	Target Date
Review and Revision of Course Outcomes	Patricia Armour Michael Simpson Heidi Schneiter	Align student learning outcomes for the above courses as it relates to content and assessment initiatives.	May 2020
Pursue state-of-the-art instrumentation for CLS student laboratories	All program faculty and staff	Research equipment to enhance the student's laboratory experience to be prepared for clinical rotation and employment.	On-going
Include certification sub-sections in overall discipline assessment	All program faculty	Program Director to provide faculty annual data from certifying examination. Faculty to include in discipline assessment	May 2020 and forward

Mission, Student Success, & Institutional Effectiveness *Describe how the results of program outcomes assessment support CSN mission fulfillment, student success, and contributes to institutional effectiveness.*
Program outcomes have been developed based on industry and certification standards. Assessment of program outcomes support the CSN mission as it shows student success in their personal, and professional, goals of pursuing a career in the Medical Laboratory field. Additionally, student success and institutional effectiveness are supported by graduation and placement rates of 100% for 2017-2018 as reported to the National Accrediting Agency for Clinical Laboratory Sciences.

Report and Disseminate Results
1. Indicate those internal and external stakeholders that need to know and should know your assessment results. 2. Describe any stakeholder feedback and the impact of that feedback to the program.
Internal stakeholders include College of Southern Nevada administration, School of Health Science leadership, and CSN faculty. External stakeholders include National Accrediting Agency for Clinical Laboratory Sciences and the Clinical Laboratory Sciences advisory board. The program requests feedback from clinical rotation sites to keep the program current in methodology.

Review & Approval	Signature	Date
Program Director/Lead Faculty Heidi Schneiter		
Department Chair Jim Godin		
Academic Dean Janice Glasper		
Director, Office of Assessment Sharon Peterson		

College of Southern Nevada

ANNUAL ACADEMIC PROGRAM (Degree and/or Certificate)

STUDENT LEARNING OUTCOMES REPORTING FORM

Academic Year	2015-2016
Academic Program	BAS-Medical Laboratory Scientist

Department: Dental Sciences, Diagnostic Evaluation and Rehabilitation Services
Date Report Completed: 11/22/16
Completed by: Heidi Schneiter
Contact Email: Heidi.schneiter@csn.edu
Contact Phone: 702-651-5864
Mission (Program Mission Strategies) *From your 3-year assessment plan, list the assessment strategies pursued during the current academic year to support the mission of your department, school and CSN.*
The students must demonstrate their learned ability each semester to a certain competency level in order to stay in the limited entry program. Students are offered remediation opportunities during courses to help them succeed as well as remediation opportunities for those who are not successful so that they can re-apply to the program. Students must successfully pass clinical practicum courses as a final assessment of ability, demonstrating competence in each major clinical laboratory discipline, and program outcomes, in order to graduate. Assessment strategies for the MLS Program include: -Evaluation of clinical laboratory related case studies. -Direct observation of skills in a clinical laboratory setting. -Evaluation of performance on national certification examinations.

REPORT OF PREVIOUS ACADEMIC YEAR ACTION PLAN FOR IMPROVEMENT ACTIVITIES
1. List the planned activities from the previous action plan and provide a narrative report on the activity results. 2. Describe the direct impact to student learning and/or impact to institutional effectiveness/improvement. 3. Indicate any follow-up actions that are still needed for activities revised or not completed. 4. Indicate how the activity results have been shared and discussed (internally and externally) with program stakeholders.
1. List the planned activities from the previous action plan and provide a narrative report on the activity results. No planned activities from previous report. **2. Describe the direct impact to student learning and/or impact to institutional effectiveness/improvement.** n/a **3. Indicate any follow-up actions that are still needed for activities revised or not completed.** n/a **4. Indicate how the activity results have been shared and discussed (internally and externally) with program stakeholders.** n/a

CURRENT ACADEMIC YEAR ASSESSMENT MEASURES	
Program Completion	
Total number of students enrolled in program on first day of the program for current AY	9
Total number of students completing program on day grades are due for last semester of current AY	9

Student Learning Outcomes

1. List each program SLO
2. The performance criterion that you use to determine achieved, partially achieved or not achieved
3. Report the percentage of students within the program that achieved, partially achieved or did not achieve each SLO
4. Attach evidence of how SLOs were assessed (summary reports, tables, graphs, charts, etc.)
5. Add additional lines for program SLO's as needed

Program SLOs	**Performance criterion (How will you determine achieved, partially achieved or not achieved?)**	**% Achieved SLO**	**% Partially Achieved SLO**	**% Not Achieved SLO**
Assess and correlate clinical and/or laboratory data through application of theory and principles.	Performance criterion is based on performance rubric. Student achievement is scored in terms of exceeds standard (3); above standard (2); meets standard (1); does not meet standard (0). **Achieved SLO:** Average score 2-3 **Partially Achieved SLO**: Average scores 1-2 **Not Achieved SLO:** Average score 0-1	Not assessed for this cycle	Not assessed for this cycle	Not assessed for this cycle
Select appropriate courses of action in accordance with established laboratory procedures.		100%	0	0
Evaluate and perform full range of clinical laboratory procedures, including quality assurance and quality control procedures.		92%	8%	0
Differentiate and resolve technical, instrument, and/or physiologic causes of unexpected or abnormal data.		83%	17%	0

Student Performance

Describe how students performed overall in the program. Indicate performance gaps and possible need for improvement.

Student performance overall is above average, with graduation rates, certification pass rates, and graduate employment, or continued education, above the benchmarks set by the National Accrediting Agency for Clinical Laboratory Sciences. However, certification board passing rates have decreased over last 3 years. It was also noted that the Urinalysis/Body Fluid sub section of the certifying examination show below national average scores. The program will monitor student achievement, even as all students meet standard for all learning outcomes.

Assessment Measurement Tools

Describe the performance and usability of the direct and indirect assessment measurement tools. Indicate performance gaps and possible need for improvement.

Three-year assessment plan dictated review of program curriculum by semester. The program has found this is not an effective strategy. Future assessment plans will review program curriculum by discipline (i.e., Hematology, Microbiology, Clinical Chemistry, etc.) In this way, the correlation of didactic, clinical rotation, and certification board examination sub-section scores can be accomplished more efficiently.

Mission Alignment

Describe how the program assessment results support CSN institutional effectiveness. Indicate performance gaps and possible need for improvement

MLS program results for 2015-2016
93% of MLS program students graduated
75% of students challenging a national certification examination successfully passed
93% of graduates gained employment in the community or continued education

Program faculty will continue to monitor.

Course Review

Based on the courses indicated for review in the current AY cycle of your 3-year assessment plan, indicate all courses that were reviewed by course number and title. For each course provide an overall summary pertaining to achievement of student learning outcomes and discuss what curriculum components were reviewed (e.g., student learning outcomes, curriculum, assessment, etc.). Provide a concluding statement of how student performance in the course supported student achievement of program student learning outcomes. Indicate any performance gaps and possible need for improvement by course.

CLS 491 Clinical Practicum-Chemistry
Review of data showed an average rating for this course as follows:
Outcome 2: 2.8 of 3
Outcome 3: 2.8 of 3
Outcome 4: 2.7 of 3
Data was compiled based on direct observation in the clinical practicum.
Evaluation of the above results, students performed above the standard for each of the programmatic outcomes. Faculty is satisfied with the results, and will continue to monitor.

CLS 493 Clinical Practicum-Immunology/Immunohematology
Review of data showed an average rating for this course as follows:
Outcome 2: 3 of 3
Outcome 3: 2.9 of 3
Outcome 4: 2.9 of 3
Data was compiled based on direct observation in the clinical practicum.
Evaluation of the above results, students performed above the standard for each of the programmatic outcomes. Faculty is satisfied with the results, and will continue to monitor.

CLS 495 Clinical Practicum-Microbiology
Review of data showed an average rating for this course as follows:
Outcome 2: 2.5 of 3
Outcome 3: 2.1 of 3
Outcome 4: 1.7 of 3
Data was compiled based on direct observation in the clinical practicum.
Evaluation of the above results, students performed above the standard for each of the assessed programmatic outcomes. Faculty is satisfied with the results, and will continue to monitor.

CLS 497 Clinical Practicum-Hematology
Review of clinical notebook showed an average rating for this course as follows:
Outcome 2: 2.9 of 3
Outcome 3: 2.9 of 3
Outcome 4: 2.9 of 3
Data was compiled based on direct observation in the clinical practicum.
Evaluation of the above results, students performed above the standard for each of the assessed programmatic outcomes. Faculty is satisfied with the results, and will continue to monitor.

Action Plan for Improvement			
3. Complete the Action Plan for Improvement to address the gaps or areas of improvement identified in your report. 4. Indicate planned activities, the purpose of the activity and how it addresses a strategy for improvement. 5. List the action steps needed and a target date where the activity will be evaluated for progress or completion results.			
Planned Activity & Purpose	Strategy for Improvement	Action Steps	Target Date
Restructure 3-year plan	Align CLS disciplines	Create plan in order to correlate didactic, clinical rotation, and certification board examination sub-section scores more efficiently.	Starting plan year 2016-2017
Create discipline review courses	To prepare students for certifying examinations	Pursue curriculum approval for review courses	2017-2018 catalog
Create upper level Urinalysis & Body Fluids course	Increase emphasis on high complexity body fluids testing	Pursue curriculum approval for new upper division Urinalysis & Body Fluids II course	2017-2018 catalog

Report and Disseminate Results
3. Indicate those internal and external stakeholders that need to know and should know your assessment results. 4. Describe any stakeholder feedback and the impact of that feedback to the program.
Internal stakeholders include College of Southern Nevada administration, School of Health Science leadership, CSN faculty. External stakeholders include National Accrediting Agency for Clinical Laboratory Sciences and the Clinical Laboratory Sciences advisory board. The program requests feedback from clinical rotation sites to keep the program current in methodology.

Review	Signature	Date
Program Director:		
Department Chair		
Academic Dean		
Director, Office of Assessment		

LLEGE OF SOUTHERN NEVADA MISSION AND CORE THEMES

SUPPLEMENTAL NARRATIVE QUESTIONS – DISCIPLINE/PREFIX (Teaching Activity)

Date Submitted: __03/04/2019___ **Submitted by:** Heidi Schneiter

Data to be provided by Chair/Program Dir/Lead Faculty:
Please respond on this form or attach additional pages. Answer only questions that are relevant to this discipline.

CORE MISSION:
1 How does this discipline relate to the Mission and Core Themes of the College?

The discipline of Clinical Laboratory Sciences (CLS) relates to the Mission of the College in that three programs, including a skills certificate, are offered to accommodate the various levels of employment in CLS. This offers students the opportunity to choose their career path, either in the selection of a terminal degree or certificate; or to work through the career ladder offered by our discipline. The CLS discipline employs four full-time faculty members, each with expertise in the CLS field. Part-time faculty are also employed who have multiple years of clinical experience to share with the students. All programs include clinical practicum experiences that allow students to apply the knowledge and skills they have acquired in the classroom.

2 To the best of your knowledge, how and to what extent is this discipline essential because of state laws, regulations, outside agency regulations, Board of Regents or Legislative priorities?

The discipline of Clinical Laboratory Sciences (CLS) is essential to the State of Nevada in that employees in the discipline are required to have a national certification in their area in order to apply for a Nevada license. All students who successfully complete programs in the CLS discipline are eligible for national certification examinations.

3 How and to what extent does this discipline support general education requirements for CSN programs?

The Clinical Laboratory Sciences (CLS) discipline supports general education requirements for CSN programs as thirty-one general education credits are required for the CLS Associate of Applied Science degree; and fifty-four general education credits are required for the CLS Bachelor of Applied Science degree. General education requirements include mathematics; English composition; communications; human relations; natural science; fine arts/humanities/social sciences; and U.S. and Nevada constitutions. The Bachelor of Applied Science degree also includes a requirement of statistics.

4 How and to what extent does this discipline support programs at CSN?

Courses in the CLS discipline support the Bachelor of Applied Science degree in Medical Laboratory Science; the Associate of Applied Science degree in Medical Laboratory Technician; the Associate of Science degree in Dental Science; the Certificate of Achievement in Medical Assisting; and the Phlebotomy Skills Certificate.

5 How and to what extent does this discipline depend upon prerequisite courses from other disciplines at CSN?

The CLS discipline is dependent upon prerequisite courses in English; Biology; Chemistry; and Math. Students are also required to take Communications, Social Sciences, Human Relations and US and Nevada Constitution in order to receive a BAS or AAS degree.

6 How and to what extent does this discipline support programs at other NSHE institutions?

The CLS discipline does not support programs at other NSHE institutions. The College of Southern Nevada is the only NSHE institution to offer programs in CLS at the Bachelor of Applied Science degree and Associate of Applied Science degree.

7 How and to what extent does this discipline support student extracurricular activities at CSN?

Students are encouraged to participate in extracurricular activities at CSN as their schedules permit.

QUALITY:
8 How and to what extent does this discipline help to satisfy a program's specialized accreditation?

The Bachelor of Applied Science degree in Medical Laboratory Scientist is accredited by the National Accrediting Agency for Clinical Laboratory Sciences.

9 How and to what extent does this discipline contribute to CSN's regional or national reputation?

Graduates of the CSN CLS programs are well respected. Employer surveys are overwhelmingly positive.

Specialized national accreditation gives CSN national recognition.

DEMAND:
10 Describe the level and nature of external demand for this discipline (for example, occupational data, labor statistics, employer surveys, student surveys, etc.)?

According the U.S. Bureau of Labor statistics, job prospects for Medical Laboratory Scientists are best for persons who complete an accredited educational program and earn a professional certification. Nationally employment rates are expected to increase by 12%, and in the State of Nevada the projection is 21%.

11 Describe the level and nature of external financial or practical support for this discipline (for example, grants, donations, employer or clinical partnerships, etc.)?

Our accrediting body dictates financial resources "for continued operation of the educational program" and "each student must have reasonable access to and experience with modern equipment and supplies". To this end, our program has been highly funded through grant funds, with the acquisition of approximately $100,000 in state-of-the-art equipment for our students in the last 5 years.

Practical support is given through our clinical affiliate sites as they provide training during the student's clinical rotation in all areas of the laboratory. In addition, local affiliates support the program through the donation of expired reagents or reagents or kits no longer in use by the facility.

12 What other options exist for students in the region to study in this discipline?

The College of Southern Nevada offers the only AAS-MLT degree in the state. Graduates of the AAS-MLT have the option to continue to the BAS-MLS program at the College of Southern Nevada, or they can apply to a number of online bachelor-completion options.

FALL 2017 CSN Medical Laboratory Science: Medical Laboratory Scientist (MLS) program Instructor: Pat Armour

LEAP Outcome	LEAP objective	CLS MLS Student Learning Outcome	CLS MLS program Measure/Instrument	Result	Analysis
LEAP Outcome Goal 1: Knowledge of Human Cultures and the Physical and Natural World	LEAP Objective a: Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts	Select appropriate course of action in accordance with established laboratory procedures	CLS 449 Applied Hematology II Lab report 13 Coaguchek POCT analyzer performance	8/8 students exceeded maximum 90% performance standard	Following instruction, 100% (8/8) CLS 449 hematology students successfully performed Coaguchek analyzer testing procedure including quality control
LEAP Outcome Goal 2: Intellectual and Practical Skills	LEAP Objective a: Inquiry and analysis b: Critical and creative thinking c: Written and oral communication	Evaluate and perform full range of clinical laboratory procedures, including quality assurance and quality control	CLS 449 Applied Hematology II Lab Report 5 Westgard QC rules	4/8 students exceeded 90% performance standard 1/8 students exceeded 80% performance standard 3/8 students were below 75% performance standard	Following instruction and study, 62.5% (5/8) students successfully interpreted quality control data in the laboratory report. All missed questions on the laboratory report were discussed and evaluated during class time.
LEAP Outcome Goal 3: Personal and Social Responsibility	LEAP Objective c: Ethical reasoning and action d: Foundations and skills for lifelong learning	Differentiate and resolve technical, instrument, and/or physiologic causes of unexpected or abnormal data	CLS 449 Applied Hematology II Unit 1 laboratory exam	5/8 students exceeded 90% performance standard 1/8 students exceeded 80% performance standard 2/8 students were below 75% performance standard	Following instruction and study, 80% (6/8) students successfully evaluated and resolved questions related to unexpected or abnormal data on Unit 1 lab exam. Following the exam, all missed questions were discussed and evaluated during class time.
LEAP Outcome Goal 4: Integrative and Applied Learning	LEAP Objective a: Synthesis and advanced accomplishment across general and specialized studies	Assess and correlate clinical and/or laboratory data through the application of theory and principles	CLS 448 Hematology II Unit 5 final lecture exam - Hemostasis	2/8 students exceeded 90% performance standard. 3/8 students exceeded 80% performance standard. 1/8 students exceeded 75% performance standard. 2/8 students were below 75% performance standard.	Following instruction and study 75% (6/8) students successfully assessed and correlated multiple case study Hemostasis questions. The instructor will evaluate the missed questions to determine additional teaching strategies for presenting the course material.

Spring 2018 **CSN Medical Laboratory Science: Medical Laboratory Scientist (MLS) program** **Instructor: Heidi Schneiter**

LEAP Outcome	LEAP objective	CLS MLS Student Learning Outcome	CLS MLS program Measure/Instrument	Benchmark	Result	Analysis
LEAP Outcome Goal 1: Knowledge of Human Cultures and the Physical and Natural World	LEAP Objective a: Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts	Select appropriate course of action in accordance with established laboratory procedures	MLS Clinical Chemistry Section B-1-2 and B-2-1	80% of students meet performance standard rating of 4 or above	8/9 students met benchmark of 4 rating (above average) or above	89% of MLT students successfully performed at above average rating while 100% were ranked as average or above while in the clinical setting.
LEAP Outcome Goal 2: Intellectual and Practical Skills	LEAP Objective a: Inquiry and analysis b: Critical and creative thinking c: Written and oral communication	Evaluate and perform full range of clinical laboratory procedures, including quality assurance and quality control	MLS Clinical Chemistry Section B-2-2 and B-2-5	80% of students meet performance standard rating of 4 or above	8/9 students met benchmark of 4 rating (above average) or above	89% of MLT students successfully performed at above average rating while 100% were ranked as average or above while in the clinical setting.
LEAP Outcome Goal 3: Personal and Social Responsibility	LEAP Objective c: Ethical reasoning and action d: Foundations and skills for lifelong learning	Differentiate and resolve technical, instrument, and/or physiologic causes of unexpected or abnormal data	MLS Clinical Chemistry Section B-2-5 and B-2-10	80% of students meet performance standard rating of 4 or above	8/9 students met benchmark of 4 rating (above average) or above	89% of MLT students successfully performed at above average rating while 100% were ranked as average or above while in the clinical setting.
LEAP Outcome Goal 4: Integrative and Applied Learning	LEAP Objective a: Synthesis and advanced accomplishment across general and specialized studies	Assess and correlate clinical and/or laboratory data through the application of theory and principles	MLS Clinical Chemistry Lipoprotein and Endocrine case studies	80% of students meet 75% performance standard	100% of MLS students exceeded 75% performance standard. 90% exceeded 90% performance.	Students successfully correlated clinical and laboratory data to assess patient status.

Frequency Tables For All MLS

Q2. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Body Fluids

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	14.3	14.3
	Good	3	42.9	42.9	57.1
	Excellent	3	42.9	42.9	100.0
	Total	7	100.0	100.0	

Q3. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Microbiology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	14.3	14.3
	Good	1	14.3	14.3	28.6
	Excellent	5	71.4	71.4	100.0
	Total	7	100.0	100.0	

Q4. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Parasitology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	2	28.6	28.6	28.6
	Good	2	28.6	28.6	57.1
	Excellent	3	42.9	42.9	100.0
	Total	7	100.0	100.0	

Q5. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Mycology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	1	14.3	14.3	14.3
	Fair	1	14.3	14.3	28.6
	Good	2	28.6	28.6	57.1
	Excellent	3	42.9	42.9	100.0
	Total	7	100.0	100.0	

Q6. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Virology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	2	28.6	28.6	28.6
	Good	2	28.6	28.6	57.1
	Excellent	3	42.9	42.9	100.0
	Total	7	100.0	100.0	

Q7. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Clinical Chemistry

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	14.3	14.3	14.3
	Excellent	6	85.7	85.7	100.0
	Total	7	100.0	100.0	

Q8. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Hematology

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Fair	1	14.3	14.3	14.3
	Excellent	6	85.7	85.7	100.0
	Total	7	100.0	100.0	

Q9. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Immunohematology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	14.3	14.3
	Good	1	14.3	14.3	28.6
	Excellent	5	71.4	71.4	100.0
	Total	7	100.0	100.0	

Q10. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Serology/immunology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	14.3	14.3
	Good	1	14.3	14.3	28.6
	Excellent	5	71.4	71.4	100.0
	Total	7	100.0	100.0	

Q11. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Molecular Diagnostics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	3	42.9	42.9	42.9
	Excellent	4	57.1	57.1	100.0
	Total	7	100.0	100.0	

Q12. Section I - Professional Preparation Please rate your understanding of issues in each of the following areas: - Phlebotomy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	14.3	14.3
	Excellent	5	71.4	71.4	85.7
	Not Applicable (N/A)	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q14. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Body Fluids

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	14.3	14.3
	Good	2	28.6	28.6	42.9
	Excellent	4	57.1	57.1	100.0
	Total	7	100.0	100.0	

Q15. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Microbiology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	14.3	14.3
	Good	1	14.3	14.3	28.6
	Excellent	5	71.4	71.4	100.0
	Total	7	100.0	100.0	

Q16. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Parasitology

		Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Fair	3	42.9	42.9	42.9
	Excellent	4	57.1	57.1	100.0
	Total	7	100.0	100.0	

Q17. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Mycology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	3	42.9	42.9	42.9
	Good	1	14.3	14.3	57.1
	Excellent	3	42.9	42.9	100.0
	Total	7	100.0	100.0	

Q18. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Virology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	2	28.6	28.6	28.6
	Good	1	14.3	14.3	42.9
	Excellent	4	57.1	57.1	100.0
	Total	7	100.0	100.0	

Q19. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Clinical Chemistry

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	14.3	16.7	16.7
	Excellent	5	71.4	83.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q20. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Hematology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	14.3	14.3
	Good	1	14.3	14.3	28.6
	Excellent	5	71.4	71.4	100.0
	Total	7	100.0	100.0	

Q21. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Immunohematology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	14.3	14.3
	Good	1	14.3	14.3	28.6
	Excellent	5	71.4	71.4	100.0
	Total	7	100.0	100.0	

Q22. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Serology/immunology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	14.3	14.3
	Excellent	6	85.7	85.7	100.0
	Total	7	100.0	100.0	

Q23. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Molecular Diagnostics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	2	28.6	28.6	28.6
	Good	1	14.3	14.3	42.9
	Excellent	4	57.1	57.1	100.0
	Total	7	100.0	100.0	

Q24. Section I - Professional Preparation Please rate your ability to perform technical procedures in each of the following areas: - Phlebotomy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	14.3	14.3
	Excellent	5	71.4	71.4	85.7
	Not Applicable (N/A)	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q25. Comments on the ability to perform technical procedures:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	28.6	100.0	100.0
Missing	System	5	71.4		
Total		7	100.0		

Q25_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		5	71.4	71.4	71.4
	Did not really have real labs for the most part	1	14.3	14.3	85.7
	N/A	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q26. Please rate student knowledge in each of the following areas. - Ability to assess factors which may affect patient results

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	16.7	16.7
	Good	2	28.6	33.3	50.0
	Excellent	3	42.9	50.0	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q27. Please rate student knowledge in each of the following areas. - Understanding of the principles of new techniques and procedures

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	16.7	16.7
	Good	1	14.3	16.7	33.3
	Excellent	4	57.1	66.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q28. Please rate student knowledge in each of the following areas. - Awareness of safety and health hazards and ability to take appropriate precautions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	16.7	16.7
	Good	2	28.6	33.3	50.0
	Excellent	3	42.9	50.0	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q29. Please rate student knowledge in each of the following areas. - Ability to collect and process biological specimens for analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	16.7	16.7
	Good	1	14.3	16.7	33.3
	Excellent	4	57.1	66.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q30. Please rate student knowledge in each of the following areas. - Ability to perform preventive maintenance on equipment and instruments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	16.7	16.7
	Good	1	14.3	16.7	33.3
	Excellent	4	57.1	66.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q31. Please rate student knowledge in each of the following areas. - Understanding of numerical data and ability to perform calculations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	2	28.6	33.3	33.3
	Good	1	14.3	16.7	50.0
	Excellent	3	42.9	50.0	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q32. Please rate student knowledge in each of the following areas. - Ability to monitor quality control within predetermined limits and take appropriate action as necessary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	1	14.3	16.7	16.7
	Good	2	28.6	33.3	50.0
	Excellent	3	42.9	50.0	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q33. Please rate student knowledge in each of the following areas. - Ability to communicate with patients and other healthcare professionals

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	14.3	16.7	16.7
	Excellent	4	57.1	66.7	83.3
	Not Applicable (N/A)	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q34. Please rate student knowledge in each of the following areas. - Ability to think critically, solve problems and make decisions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	14.3	20.0	20.0
	Excellent	4	57.1	80.0	100.0
	Total	5	71.4	100.0	
Missing	System	2	28.6		
Total		7	100.0		

Q35. Please rate student knowledge in each of the following areas. - Ability to locate and use information

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	14.3	20.0	20.0
	Excellent	4	57.1	80.0	100.0
	Total	5	71.4	100.0	
Missing	System	2	28.6		
Total		7	100.0		

Q36. Please rate student knowledge in each of the following areas. - Ability to use computers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	14.3	16.7	16.7
	Excellent	5	71.4	83.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q37. Please rate student knowledge in each of the following areas. - Ability to organize daily workload

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	14.3	16.7	16.7
	Excellent	5	71.4	83.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q38. Please rate student knowledge in each of the following areas. - Understanding of role and responsibility of laboratory personnel

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	14.3	16.7	16.7
	Excellent	5	71.4	83.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q39. Please rate student knowledge in each of the following areas. - Commitment to maintaining professional competency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	14.3	16.7	16.7
	Excellent	5	71.4	83.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q40. Please rate student knowledge in each of the following areas. - Commitment to ethical, legal, and professional behavior

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	5	71.4	100.0	100.0
Missing	System	2	28.6		
Total		7	100.0		

Q42. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Adequacy of information in college catalog

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	1	14.3	16.7	83.3
	Poor	1	14.3	16.7	100.0

	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q43. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Limited Entry admissions process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	3	42.9	50.0	50.0
	Good	2	28.6	33.3	83.3
	Fair	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q44. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Orientation to program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	1	14.3	16.7	83.3
	Fair	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q45. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Quality of classroom instruction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7

	Good	1	14.3	16.7	83.3
	Fair	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q46. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Relevance of course content

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	80.0	80.0
	Good	1	14.3	20.0	100.0
	Total	5	71.4	100.0	
Missing	System	2	28.6		
Total		7	100.0		

Q47. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Availability of appropriate equipment (i.e., audio-visual)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	1	14.3	16.7	83.3
	Fair	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q48. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Quality of laboratory instruction

		Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Excellent	4	57.1	66.7	66.7
	Good	1	14.3	16.7	83.3
	Poor	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q49. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Availability of adequate supplies and instrumentation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	3	42.9	50.0	50.0
	Good	1	14.3	16.7	66.7
	Fair	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q50. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Adequacy of simulated laboratory activities in preparation for clinical competence

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	3	42.9	50.0	50.0
	Good	2	28.6	33.3	83.3
	Fair	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q51. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Selection of appropriate textbooks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	1	14.3	16.7	83.3
	Poor	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q52. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Fairness of faculty grading processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q53. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Accessibility of faculty during posted office hours

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q54. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Academic advisement and assistance with course selection

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q55. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Faculty interest in and availability to students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q56. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Library collections and services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q57. Section II - Program Resources Please comment on each of the following aspects of your MLT education experience. - Computer resources

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q58. Comments on areas of Program Resources.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	3	42.9	100.0	100.0
Missing	System	4	57.1		
Total		7	100.0		

Q58_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		4	57.1	57.1	57.1
	N/A	1	14.3	14.3	71.4
	None	1	14.3	14.3	85.7
	There were times we didn't have reagents that we're needed.	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q59. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Olympus AU 400e

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q60. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Coulter Brand ACT Diff 2 Hematology Analyzer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q61. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - AcroSpray Hematology Stainer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	3	42.9	50.0	50.0
	Good	3	42.9	50.0	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q62. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Centra-W Cell Washer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q63. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Ortho Gel System

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q64. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - i-Stat Analyzer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q65. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Meiji Polarizing Light Microscope

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q66. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Swift Microscope

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q67. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Vitek II

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	3	42.9	50.0	50.0
	Good	3	42.9	50.0	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q68. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - BacTAlert System

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	3	42.9	50.0	50.0
	Good	3	42.9	50.0	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q69. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Siemens CA - 530

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q70. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Siemens PFA - 100

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	

Missing	System	1	14.3		
Total		7	100.0		

Q71. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate the relevance of each piece of equipment in your CLS education experience. - Clinitek Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q72. Comments on Perkins Grant funded equipment:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	28.6	100.0	100.0
Missing	System	5	71.4		
Total		7	100.0		

Q72_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		5	71.4	71.4	71.4
	N/A	1	14.3	14.3	85.7
	Out Dated - Expensive Testing Supplies	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q73. Section III - Clinical Affiliate Instruction Please comment on each of the following aspects of your clinical practicum experience: - Quality of clinical facilities used for training

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	2	28.6	33.3	33.3
	Good	3	42.9	50.0	83.3
	Fair	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q74. Section III - Clinical Affiliate Instruction Please comment on each of the following aspects of your clinical practicum experience: - Quality of instruction at clinical affiliate site

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	1	14.3	16.7	83.3
	Fair	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q75. Section III - Clinical Affiliate Instruction Please comment on each of the following aspects of your clinical practicum experience: - Allocation of adequate practicum time in each clinical area

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	1	14.3	16.7	83.3
	Fair	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q76. Section III - Clinical Affiliate Instruction Please comment on each of the following aspects of your clinical practicum experience: - Orientation to safety and infection control procedures

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	1	14.3	16.7	83.3
	Fair	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q77. Section III - Clinical Affiliate Instruction Please comment on each of the following aspects of your clinical practicum experience: - Orientation to testing procedures

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	1	14.3	16.7	83.3
	Poor\N/A	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q78. Section III - Clinical Affiliate Instruction Please comment on each of the following aspects of your clinical practicum experience: - Adequate hands-on experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	80.0	80.0
	Good	1	14.3	20.0	100.0
	Total	5	71.4	100.0	

Missing	System	2	28.6		
Total		7	100.0		

Q79. Section III - Clinical Affiliate Instruction Please comment on each of the following aspects of your clinical practicum experience: - Fairness of grading practices of clinical instructors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q80. Comments on Clinical Affiliate Instruction:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	28.6	100.0	100.0
Missing	System	5	71.4		
Total		7	100.0		

Q80_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		5	71.4	71.4	71.4
	Did the best they could	1	14.3	14.3	85.7
	N/A	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q81. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Initial college information and registration assistance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	3	42.9	50.0	50.0
	Good	1	14.3	16.7	66.7
	Fair	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q82. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Services provided by financial aid office

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	1	14.3	16.7	16.7
	Good	1	14.3	16.7	33.3
	Fair	1	14.3	16.7	50.0
	Poor	1	14.3	16.7	66.7
	N/A	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q83. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Services provided by admissions and records office

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	3	42.9	50.0	50.0
	Good	2	28.6	33.3	83.3
	Fair	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q84. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Grade reporting and transcript processing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	1	14.3	16.7	83.3
	Poor	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q85. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Counseling services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	2	28.6	33.3	33.3
	Good	2	28.6	33.3	66.7
	Fair	1	14.3	16.7	83.3
	N/A	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q86. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Career development and job preparation services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	3	42.9	50.0	50.0
	Good	1	14.3	16.7	66.7
	Fair	1	14.3	16.7	83.3
	N/A	1	14.3	16.7	100.0

	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q87. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Maintenance of buildings and grounds

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	3	42.9	50.0	50.0
	Good	2	28.6	33.3	83.3
	Fair	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q88. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Parking facilities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	1	14.3	16.7	83.3
	Poor	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q89. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Campus security

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7

	Good	1	14.3	16.7	83.3
	Fair	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q90. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - College bookstore

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	3	42.9	50.0	50.0
	Good	1	14.3	16.7	66.7
	Poor	2	28.6	33.3	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q91. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Instructional facilities and equipment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	1	14.3	16.7	83.3
	Fair	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q92. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Library collections and services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	1	14.3	16.7	83.3
	Fair	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q93. Section IV - College Resources Please comment on each of the following aspects of your CSN general education experience. - Computer resources

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	4	57.1	66.7	66.7
	Good	1	14.3	16.7	83.3
	Fair	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q94. Comments on College Resources:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	4	57.1	100.0	100.0
Missing	System	3	42.9		
Total		7	100.0		

Q94_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		3	42.9	42.9	42.9

	college bookstore very expensive for a college student who is not on financial aid	1	14.3	14.3	57.1
	N/A	1	14.3	14.3	71.4
	None	1	14.3	14.3	85.7
	The personnel for registration/admissions/financial aid seem like they're unhappy in their job.	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q95. Which one of the following statements best describes your employment status?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed	4	57.1	66.7	66.7
	Unemployed, seeking employment	1	14.3	16.7	83.3
	Unavailable for employment at this time	1	14.3	16.7	100.0
	Total	6	85.7	100.0	
Missing	System	1	14.3		
Total		7	100.0		

Q96_1:Enrolled in CLS Program for personal development only

		Frequency	Percent
Missing	System	7	100.0

Q96_2: Unable due to health condition

		Frequency	Percent
Missing	System	7	100.0

Q96_3: Unwilling to relocate to take an available position

		Frequency	Percent
Missing	System	7	100.0

Q96_4: Not sufficiently prepared by CLS Program to gain entry-level employment in field

		Frequency	Percent
Missing	System	7	100.0

Q96_5:Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Other	2	28.6	100.0	100.0
Missing	System	5	71.4		
Total		7	100.0		

Q96_5OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		5	71.4	71.4	71.4
	Out of the State during Summer Break	1	14.3	14.3	85.7
	Taking certification exam	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q97. If employed, which best describes your facility?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Medical Laboratory	4	57.1	100.0	100.0

Missing	System	3	42.9		
Total		7	100.0		

Q98. If employed, indicate your employment status.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Full-time	4	57.1	100.0	100.0
Missing	System	3	42.9		
Total		7	100.0		

Q99_1:Job Title

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Job Title	3	42.9	100.0	100.0
Missing	System	4	57.1		
Total		7	100.0		

Q99_2:Brief description of your duties

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Brief description of your duties	3	42.9	100.0	100.0
Missing	System	4	57.1		
Total		7	100.0		

Q99_3:Name of employer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Name of employer	3	42.9	100.0	100.0
Missing	System	4	57.1		
Total		7	100.0		

Q99_4:Street Address

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Street Address	2	28.6	100.0	100.0
Missing	System	5	71.4		
Total		7	100.0		

Q99_5:City

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	City	3	42.9	100.0	100.0
Missing	System	4	57.1		
Total		7	100.0		

Q99_6:State

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	State	3	42.9	100.0	100.0
Missing	System	4	57.1		
Total		7	100.0		

Q99_7:Zip

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Zip	2	28.6	100.0	100.0
Missing	System	5	71.4		
Total		7	100.0		

Q99_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		4	57.1	57.1	57.1

	Clinical Laboratory Technologist	1	14.3	14.3	71.4
	Medical Technologist-generalist	1	14.3	14.3	85.7
	MLT	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q99_2OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		4	57.1	57.1	57.1
	Clinical lab	1	14.3	14.3	71.4
	Heme, Chem, BB	1	14.3	14.3	85.7
	Microbiology Department	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q99_3OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		4	57.1	57.1	57.1
	Centennial Hills Hospital Medical Center	1	14.3	14.3	71.4
	KRMC	1	14.3	14.3	85.7
	University Medical Center	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q99_4OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		5	71.4	71.4	71.4
	1800 West Charleston Boulevard	1	14.3	14.3	85.7
	6900 n Durango dr	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q99_5OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		4	57.1	57.1	57.1
	Kingman	1	14.3	14.3	71.4
	Las Vegas	2	28.6	28.6	100.0
	Total	7	100.0	100.0	

Q99_6OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		4	57.1	57.1	57.1
	AZ	1	14.3	14.3	71.4
	Nevada	1	14.3	14.3	85.7
	NV	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q99_7OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		5	71.4	71.4	71.4
	89102	1	14.3	14.3	85.7
	89149	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q100. AT which college or university are you enrolled?

		Frequency	Percent
Missing	System	7	100.0

Q100_1OT

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	7	100.0	100.0	100.0

Q101. Is your continuing education related to clinical laboratory science?

		Frequency	Percent
Missing	System	7	100.0

Q101_3OT

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	7	100.0	100.0	100.0

Q102. Section VI - Program Evaluation Please comment on the overall effectiveness of the CLS Program in helping you to attain your personal and professional goals.What are the program strengths?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	6	85.7	100.0	100.0
Missing	System	1	14.3		
Total		7	100.0		

Q102_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	14.3	14.3	14.3
	Instructors very helpful will all the questions regarding the program and applying for state license.	1	14.3	14.3	28.6

	Labs, powerpoints, teachers	1	14.3	14.3	42.9
	Preparation of real word laboratory practice	1	14.3	14.3	57.1
	relevant instruction	1	14.3	14.3	71.4
	Some instructors could actually teach and test over what was actually covered and taught	1	14.3	14.3	85.7
	The professors	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q103. What are the program weaknesses?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	5	71.4	100.0	100.0
Missing	System	2	28.6		
Total		7	100.0		

Q103_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	28.6	28.6	28.6
	I really wish the school would have enough grant or money to fund this program and not just focus on other departments such as NURSING!!	1	14.3	14.3	42.9
	Lack of resources of body fluid analysis	1	14.3	14.3	57.1
	Other instructors did not teach, and tested over chapters and things not taught in class. No Direction.	1	14.3	14.3	71.4

	The length of time it takes to get reagents and size of classroom (too small)	1	14.3	14.3	85.7
	was Ramon but that has been fixed	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q104. What specific improvements would you recommend?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	5	71.4	100.0	100.0
Missing	System	2	28.6		
Total		7	100.0		

Q104_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	28.6	28.6	28.6
	Bigger classrooms	1	14.3	14.3	42.9
	Having a review course of all subjects, to refresh subjects that weren't as recent.	1	14.3	14.3	57.1
	more online portions	1	14.3	14.3	71.4
	No more budget cuts on this program. more updated machines and tools.	1	14.3	14.3	85.7
	Planned coursework objectives that are followed, reviewed, taught and tested so the student can focus their studies.	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q105. In what ways were the program faculty helpful?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	6	85.7	100.0	100.0
Missing	System	1	14.3		
Total		7	100.0		

Q105_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	14.3	14.3	14.3
	Accessibility and flexibility	1	14.3	14.3	28.6
	Everything.	1	14.3	14.3	42.9
	Extremely helpful, always willing to answer our questions, and took time outside class hours to help whenever needed	1	14.3	14.3	57.1
	Faculty should teach the same subject with continuity. Meaning, if a different instructor teaches the same course the objectives used are the same so all students regardless of instructor are prepared to take the board certification exam.	1	14.3	14.3	71.4
	Gaining knowledge and past experience from faculty of how to handle certain situation	1	14.3	14.3	85.7
	very helpful	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q106. How well did the program prepare you for board certification?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	6	85.7	100.0	100.0
Missing	System	1	14.3		
Total		7	100.0		

Q106_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	14.3	14.3	14.3
	adequately	1	14.3	14.3	28.6
	Did an awesome job. Got what I needed for the board exam.	1	14.3	14.3	42.9
	Fair	1	14.3	14.3	57.1
	Good	1	14.3	14.3	71.4
	Somewhat helpful	1	14.3	14.3	85.7
	They did very well, need more self study on my part	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Q107. In what ways will your CLS education help you to achieve future goals?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	6	85.7	100.0	100.0
Missing	System	1	14.3		
Total		7	100.0		

Q107_1OT

		Frequency	Percent	Valid Percent	Cumulative Percent

Valid		1	14.3	14.3	14.3
	a college bachelor's degree	1	14.3	14.3	28.6
	By having a Review course that is not graded but instead focuses on the ASCP BOC MLS material and offers example testing in order to gauge what areas to focus on next. Offering LabCE in the program at the very least.	1	14.3	14.3	42.9
	CLS education already achieved my goal. Got a job in Microbiology department and loving it.	1	14.3	14.3	57.1
	finally be a career field that I will actually like	1	14.3	14.3	71.4
	Future goals for masters in public health	1	14.3	14.3	85.7
	It will open up advancement opportunities.	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Results of Online MLS Graduate Survey Deployed in 2017

No. of respondents: 7 but only 6 completed the survey (2 in 2015; 1 in 2016; and 4 in 2017)

Question #2 on Professional Preparation:

6 of 7 (85.7%) responded "excellent" to the questions on: a) Understanding of Issues and b) Ability to perform technical procedures in the following core areas: Chemistry and Hematology. 5 of 7 (71.4% for Immunohematology and Microbiology.

Question # 42 Sec II Program Resources (Just 6 correspondents answered from here on)

4 of 6 (67%) responded "excellent" to the following program resources: a) Quality of classroom instruction; b) Relevance of course content; and c) Availability of appropriate instrumentation, equipment (i.e., audiovisual), and adequate supplies.

Q # 73 III Clinical Affiliation Instruction

4 of 6 (67%) responded "excellent" to the following: q) Quality of instruction at the clinical affiliate sites; b) Allocation of adequate practice time in each clinical area; c) Orientation to safety and infection control procedures, and testing procedures; d) Adequate hands-on experience; and e) Fairness of grading practices of clinical instructors.

Q # 81 IV College Resources

4 of 6 (67%) responded "excellent" to the following resources: a) Parking facilities; b) Campus security; c) Instructional facilities and equipment; d) Library collections and services; and e) Computer resources.

Q # 95 Employment Status

4 of 6 (67%) responded "employed fulltime in a medical laboratory". 1 of 6 (16.6%) replied "seeking employment" and the last 1 of 6 replied unavailable for employment at this time".

Q # 101 Sec VI Program Evaluation

Comments given on the overall effectiveness of the CLS program in helping them attain their personal and professional goals: a) Instructors delivered relevant lectures, and b) laboratory activities performed were in preparation for the real-world laboratory practice.

Q # 104 Responses to the Q "What specific improvement would you recommend?"

Review course of all subjects and more updated machines and tools for the laboratory.

Q # 106 How well did the program prepare you for the board certification program?

5 of 6 (83.3%) answered good to fair to adequate. 1 of 6 (16.6%) answered "program did very well but I just needed more self study on my part".

Q # 107 In what ways will your CLS education help you achieve future goals? Answers given were: a) Clears the way for me to earn a college degree; b) get a good job in a career that I actually like; c) prepares for a master's degree in public health; and d) provides advancement opportunities.

MLS / MLT Programs Employer Survey

Description:
Date Created: 7/12/2016 4:47:35 PM
Date Range: 7/12/2016 4:46:00 PM - 8/26/2016 4:46:00 PM
Total Respondents: 5

Q1. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Body Fluids

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
0	0.00%		Excellent
2	50.00%		Not Applicable (N/A)
4	Respondents		

Q2. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Microbiology

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
3	60.00%		Good

1	20.00%		Excellent
1	20.00%		Not Applicable (N/A)
5	Respondents		

Q3. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Parasitology

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
1	25.00%		Good
0	0.00%		Excellent
3	75.00%		Not Applicable (N/A)
4	Respondents		

Q4. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Mycology

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair

1	25.00%		Good
0	0.00%		Excellent
3	75.00%		Not Applicable (N/A)
4	Respondents		

Q5. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Virology

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
0	0.00%		Excellent
2	50.00%		Not Applicable (N/A)
4	Respondents		

Q6. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Clinical Chemistry

Count	Percent

0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
1	25.00%		Excellent
1	25.00%		Not Applicable (N/A)
4	Respondents		

Q7. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Hematology

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
1	25.00%		Excellent
1	25.00%		Not Applicable (N/A)
4	Respondents		

Q8. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Immunohematology

Count	Percent

0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
2	50.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q9. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Serology/immunology

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
1	25.00%		Excellent
1	25.00%		Not Applicable (N/A)
4	Respondents		

Q10. Section I - Professional Preparation Please rate student ability to perform technical procedures in the areas to which they were assigned in your facility: - Phlebotomy

Count	Percent	
0	0.00%	Poor
0	0.00%	Fair
1	25.00%	Good
1	25.00%	Excellent
2	50.00%	Not Applicable (N/A)
4	Respondents	

Q11. Please use this space for any additional comments regarding student knowledge.

Count	Percent	
1	100.00%	

Count	Percent	
1	100.00%	Came prepared to learn.

1 Respondents

Q12. Please rate student knowledge in each of the following areas. - Ability to assess factors which may affect patient results

Count	Percent	
0	0.00%	Poor
0	0.00%	Fair

2	50.00%	Good
2	50.00%	Excellent
0	0.00%	Not Applicable (N/A)
4	Respondents	

Q13. Please rate student knowledge in each of the following areas. - Understanding of the principles of new techniques and procedures

Count	Percent	
0	0.00%	Poor
0	0.00%	Fair
2	50.00%	Good
2	50.00%	Excellent
0	0.00%	Not Applicable (N/A)
4	Respondents	

Q14. Please rate student knowledge in each of the following areas. - Awareness of safety and health hazards and ability to take appropriate precautions

Count	Percent

0	0.00%		Poor
0	0.00%		Fair
1	33.33%		Good
2	66.67%		Excellent
0	0.00%		Not Applicable (N/A)
3	Respondents		

Q15. Please rate student knowledge in each of the following areas. - Ability to collect and process biological specimens for analysis

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
1	25.00%		Good
1	25.00%		Excellent
2	50.00%		Not Applicable (N/A)
4	Respondents		

Q16. Please rate student knowledge in each of the following areas. - Ability to perform preventive maintenance on equipment and instruments

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
3	75.00%		Good
1	25.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q17. Please rate student knowledge in each of the following areas. - Understanding of numerical data and ability to perform calculations

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
1	25.00%		Excellent
1	25.00%		Not Applicable (N/A)

4	Respondents		

Q18. Please rate student knowledge in each of the following areas. - Ability to monitor quality control within predetermined limits and take appropriate action as necessary

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
2	50.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q19. Please rate student knowledge in each of the following areas. - Ability to communicate with patients and other healthcare professionals

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
1	25.00%		Good
1	25.00%		Excellent
2	50.00%		Not Applicable (N/A)

4	Respondents

Q20. Please rate student knowledge in each of the following areas. - Ability to think critically, solve problems and make decisions

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
3	75.00%		Good
1	25.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q21. Please rate student knowledge in each of the following areas. - Ability to locate and use information

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good

2	50.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q22. Please rate student knowledge in each of the following areas. - Ability to use computers

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
2	50.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q23. Please rate student knowledge in each of the following areas. - Ability to organize daily workload

Count	Percent		
0	0.00%		Poor

0	0.00%		Fair
3	75.00%		Good
1	25.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q24. Please rate student knowledge in each of the following areas. - Understanding of role and responsibility of laboratory personnel

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
2	50.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q25. Please rate student knowledge in each of the following areas. - Commitment to maintaining professional competency

Count	Percent

0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
2	50.00%		Excellent
0	0.00%		Not Applicable (N/A)
4	Respondents		

Q26. Please rate student knowledge in each of the following areas. - Commitment to ethical, legal, and professional behavior

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
2	50.00%		Good
2	50.00%		Excellent
0	0.00%		Not Applicable (N/A)

4 Respondents

Q27. Please use this space for any additional comments regarding the above technical procedures.

Count	Percent
0	0.00%

Count	Percent

0 Respondents

Q28. Section II - Employer Information Please answer the following questions pertaining to your facility. Does your facility currently employ a CSN MLS / MLT Program graduate?

Count	Percent	
3	75.00%	Yes
1	25.00%	No

4 Respondents

Q29. How many does your facility curre ıtly employ?

Count	Percent
3	100.00%

Count	Percent	
2	66.67%	1
1	33.33%	2

3 Respondents

Q30. In what job capacity/clinical area do they perform?

Count	Percent	
3	100.00%	

Count	Percent	
1	33.33%	Hematology
1	33.33%	Med Technologist
1	33.33%	Microbiology

3 Respondents

Q31. Would you consider hiring a CSN MLS / MLT Program graduate in the future?

Count	Percent	
1	100.00%	Yes
0	0.00%	No, why not

Count	Percent
1	Respondents

Q32. How important are Phlebotomy skills in your consideration of an MLS / MLT for employment?

Count	Percent	
0	0.00%	Very Important
1	25.00%	Somewhat important

3	75.00%		Not Important
0	0.00%		Phlebotomy is not performed at my facility
4	Respondents		

Q33. How would you rate CSN MLS / MLT Program graduates in comparison to other MLSs / MLTs employed at your facility?

Count	Percent		
0	0.00%		Superior
4	100.00%		Comparable
0	0.00%		Inferior
0	0.00%		Do not employ MLSs / MLTs at my facility
4	Respondents		

Q34. Which of the following best characterizes your facility?

Count	Percent		
2	50.00%		Hospital < 500 beds
0	0.00%		Hospital > 500 beds

1	25.00%	The students are passionate about the profession and are eager to learn.
1	25.00%	Well rounded knowledge on the theoretical side of the medical laboratory science.

4 Respondents

1	25.00%		Private Laboratory
0	0.00%		Physicians Office
0	0.00%		Outpatient clinic
1	25.00%		Other

Count	Percent	
1	100.00%	Reference Laboratory

4 Respondents

Q35. Section III - Program Evaluation Please comment on the overall effectiveness of the CSN MLS / MLT Programs in helping prepare Medical Laboratory Scientists /Technicians to function competently in the clinical setting. What strengths do our students possess?

Count	Percent
4	100.00%

Count	Percent	
1	25.00%	Able to use LIS easily, eager to learn
1	25.00%	Good understanding in all sections.

Q36. What are your perceived weaknesses of our students?

Count	Percent	
3	100.00%	

Count	Percent	
1	33.33%	Instrument trouble shooting
1	33.33%	There can be a lot of idle chatter at times.
1	33.33%	Trouble shooting instruments is a common weakness not just with students fresh out of school but with techs that have never encountered a specific instrument. It is a skill that comes with time and more exposure to the nuances of each intrument.

3 Respondents

Q37. What specific recommendations could you make to improve student performance?

Count	Percent	
1	100.00%	

Count	Percent	
1	100.00%	Take the opportunity to take notes during training and review notes for the next day.

1 Respondents

Q38. In what ways could program faculty be more helpful in practicum coordination and supervision?

Count	Percent	
3	100.00%	

Count	Percent	
1	33.33%	Continue on coordinating with inhouse contacts in the various hospitals and labs across the valley.
1	33.33%	Faculty does a very good job and makes coordination easy.
1	33.33%	Good well rounded program.

3 Respondents

Q39. What specific recommendations could you make to enhance the practicum experience for students and clinical affiliate personnel?

Count	Percent

1	50.00%	Open communication with contacts in the hospitals and labs would ensure that the facility could accomodate student/s at the best possible time/schedule to maximize the learning experience of the student/s.
2	Respondents	

2	100.00%

Count	Percent	
1	50.00%	None.

Q40. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Olympus AU 400e

Count	Percent		
0	0.00%		Poor
1	33.33%		Fair
1	33.33%		Good
0	0.00%		Excellent
1	33.33%		Not Applicable (N/A)
3	Respondents		

Q41. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Coulter Brand AcT Diff 2 Hematology Analyzer

Count	Percent

0	0.00%		Poor
1	33.33%		Fair
1	33.33%		Good
0	0.00%		Excellent
1	33.33%		Not Applicable (N/A)
3	Respondents		

Q42. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - AcroSpray Hematology Stainer

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
0	0.00%		Good
1	33.33%		Excellent
2	66.67%		Not Applicable (N/A)

3	Respondents	

Q43. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Centra-W Cell Washer

Count	Percent	
0	0.00%	Poor
1	33.33%	Fair
0	0.00%	Good
1	33.33%	Excellent
1	33.33%	Not Applicable (N/A)
3	Respondents	

Q44. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Ortho Gel System

Count	Percent	
0	0.00%	Poor
1	33.33%	Fair
0	0.00%	Good

2	66.67%		Excellent
0	0.00%		Not Applicable (N/A)
3	Respondents		

Q45. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - i-Stat Analyzer

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
0	0.00%		Good
1	33.33%		Excellent
2	66.67%		Not Applicable (N/A)
3	Respondents		

Q46. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Vein Viewer Imaging System

Count	Percent		
0	0.00%		Poor

0	0.00%		Fair
0	0.00%		Good
1	33.33%		Excellent
2	66.67%		Not Applicable (N/A)
3	Respondents		

Q47. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Swift Microscope

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
0	0.00%		Good
1	33.33%		Excellent

2	66.67%		Not Applicable (N/A)
3	Respondents		

Q48. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Vitek II

Count	Percent		
0	0.00%		Poor
1	33.33%		Fair
0	0.00%		Good
1	33.33%		Excellent
1	33.33%		Not Applicable (N/A)
3	Respondents		

Q49. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - BacTAlert System

Count	Percent		
0	0.00%		Poor
0	0.00%		Fair
1	33.33%		Good

1	33.33%		Excellent
1	33.33%		Not Applicable (N/A)
3	Respondents		

Q50. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Siemens CA - 530

Count	Percent		
0	0.00%		Poor
1	33.33%		Fair
0	0.00%		Good
1	33.33%		Excellent
1	33.33%		Not Applicable (N/A)
3	Respondents		

Q51. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Siemens PFA - 100

Count	Percent		
0	0.00%		Poor

0	0.00%		Fair
1	33.33%		Good
1	33.33%		Excellent
1	33.33%		Not Applicable (N/A)
3	Respondents		

Q52. The Perkins Grant made it possible for the CLS program to avail of the equipment listed below. Please rate how each piece of equipment compares with the state-of-the-art equipment currently used in the industry today. - Clinitek Status

Count	Percent		
0	0.00%		Poor
1	33.33%		Fair
0	0.00%		Good
1	33.33%		Excellent
1	33.33%		Not Applicable (N/A)
3	Respondents		

COLLEGE OF SOUTHERN NEVADA MISSION AND CORE THEMES

SUPPLEMENTAL NARRATIVE QUESTIONS – DISCIPLINE/PREFIX (Teaching Activity)

Date Submitted: 03/04/2019 **Submitted by:** Heidi Schneiter

Data to be provided by Chair/Program Dir/Lead Faculty
Please respond on this form or attach additional pages. Answer only questions that are relevant to this discipline.

CORE MISSION:
1 How does this discipline relate to the Mission and Core Themes of the College?

The discipline of Clinical Laboratory Sciences (CLS) relates to the Mission of the College in that four programs are offered to accommodate the various levels of employment in CLS. This offers students the opportunity to choose their career path, either in the selection of a terminal degree or certificate; or to work through the career ladder offered by our discipline. The CLS discipline employs four full-time faculty members, each with expertise in the CLS field. Part-time faculty are also employed who have multiple years of clinical experience to share with the students. All programs include clinical practicum experiences that allow students to apply the knowledge and skills they have acquired in the classroom.

2 To the best of your knowledge, how and to what extent is this discipline essential because of state laws, regulations, outside agency regulations, Board of Regents or Legislative priorities?

The discipline of Clinical Laboratory Sciences (CLS) is essential to the State of Nevada in that employees in the discipline are required to have a national certification in their area in order to apply for a Nevada license. All students who successfully complete programs in the CLS discipline are eligible for national certification examinations.

3 How and to what extent does this discipline support general education requirements for CSN programs?

The Clinical Laboratory Sciences (CLS) discipline supports general education requirements for CSN programs as thirty-one general education credits are required for the CLS Associate of Applied Science degree; and fifty-four general education credits are required for the CLS Bachelor of Applied Science degree. General education requirements include mathematics; English composition; communications; human relations; natural science; fine arts/humanities/social sciences; and U.S. and Nevada constitutions. The Bachelor of Applied Science degree also includes a requirement of statistics.

4 How and to what extent does this discipline support programs at CSN?

Courses in the CLS discipline support the Bachelor of Applied Science degree in Medical Laboratory Science; the Associate of Applied Science degree in Medical Laboratory Technician; the Associate of Science degree in Dental Science; the Certificate of Achievement in Medical Assisting; and the Phlebotomy Skills Certificate.

5 How and to what extent does this discipline depend upon prerequisite courses from other disciplines at CSN?

The CLS discipline is dependent upon prerequisite courses in English; Biology; Chemistry; and Math. Students are also required to take Communications, Social Sciences, Human Relations and US and Nevada Constitution in order to receive a BAS or AAS degree.

6 How and to what extent does this discipline support programs at other NSHE institutions?

The CLS discipline does not support programs at other NSHE institutions. The College of Southern Nevada is the only NSHE institution to offer programs in CLS at the Bachelor of Applied Science degree and Associate of Applied Science degree.

7 How and to what extent does this discipline support student extracurricular activities at CSN?

Students are encouraged to participate in extracurricular activities at CSN as their schedules permit.

QUALITY:

8 How and to what extent does this discipline help to satisfy a program's specialized accreditation?

The Associate of Applied Science degree in Medical Laboratory Technician is accredited by the National Accrediting Agency for Clinical Laboratory Sciences.
The Bachelor of Applied Science degree in Medical Laboratory Scientist is accredited by the National Accrediting Agency for Clinical Laboratory Sciences.

9 How and to what extent does this discipline contribute to CSN's regional or national reputation?

Graduates of the CSN CLS programs are well respected. Employer surveys are overwhelmingly positive.

Specialized national accreditation gives CSN national recognition.

DEMAND:

10 Describe the level and nature of external demand for this discipline (for example, occupational data, labor statistics, employer surveys, student surveys, etc.)?

According the U.S. Bureau of Labor statistics, job prospects for Medical Laboratory Technicians are best for persons who complete an accredited educational program and earn a professional certification. Nationally employment rates are expected to increase by 14%, and in the State of Nevada the projection is 21%.

According the U.S. Bureau of Labor statistics, job prospects for Medical Laboratory Scientists are best for persons who complete an accredited educational program and earn a professional certification. Nationally employment rates are expected to increase by 12%, and in the State of Nevada the projection is 21%.

11 Describe the level and nature of external financial or practical support for this discipline (for example, grants, donations, employer or clinical partnerships, etc.)?

Our accrediting body dictates financial resources “for continued operation of the educational program” and “each student must have reasonable access to and experience with modern equipment and supplies”. To this end, our program has been highly funded through grant funds, with the acquisition of approximately $100,000 in state-of-the-art equipment for our students in the last 5 years.

Practical support is given through our clinical affiliate sites as they provide training during the student’s clinical rotation in all areas of the laboratory. In addition, local affiliates support the program through the donation of expired reagents or reagents or kits no longer in use by the facility.

12 What other options exist for students in the region to study in this discipline?

The College of Southern Nevada offers the only AAS-MLT degree in the state. Graduates of the AAS-MLT have the option to continue to the BAS-MLS program at the College of Southern Nevada, or they can apply to a number of online bachelor-completion options.

SUPPLEMENTAL NARRATIVE QUESTIONS – PROGRAM (Program Activity)

Date Submitted: __03/04/2019___ **Submitted by:** Heidi Schneiter

Data to be provided by Chair/Program Dir/Lead Faculty

Please respond on this form or attach additional pages. Answer only questions that are relevant to this program.

CORE MISSION:

1 How does this program relate to the Mission and Core Themes of the College? (See appendix)

The Bachelor of Applied Science (BAS) degree in Medical Laboratory Scientist (MLS) relates to the Mission of the College as it provides education and training to enrich the individual, while responding to the identified needs of the state and local community.

The CLS discipline employs four full-time faculty members, each with expertise in the CLS field. Part-time faculty are also employed who have multiple years of clinical experience to share with the students.

The program includes clinical practicum experiences that allow students to apply the knowledge and skills they have acquired in the classroom.

2 To the best of your knowledge, how and to what extent is this program essential because of state laws, regulations, outside agency regulations, Board of Regents or Legislative priorities?

The BAS-MLS program of Clinical Laboratory Sciences (CLS) is essential to the State of Nevada in that Medical Laboratory Scientists are required to have a national certification in order to apply for a Nevada license.
All students who successfully complete the MLS program are eligible for national certification examinations.

3 How and to what extent does this program relate to programs at other NSHE institutions (for example, overlapping programs, articulation or transfer relationships, etc.)?

The MLS program does not support programs at other NSHE institutions. The College of Southern Nevada is the only NSHE institution to offer programs in CLS at the Bachelor of Applied Science degree.

4 How and to what extent does this program relate to programs at non-NSHE colleges in Southern Nevada?

The MLS program does not relate to programs at non-NSHE colleges in Southern Nevada.

5 How and to what extent does this program depend upon prerequisite courses from other disciplines at CSN?

The MLS program is dependent upon prerequisite courses in English; Biology; Chemistry; and Math. Students are also required to take Communications, Social Sciences, Human Relations and US and Nevada Constitution in order to receive the BAS degree.

6 How and to what extent does this program utilize other college resources for academic support (for example, library, technology, counseling, disability resource center, tutoring, writing or math centers, etc.)?

Library: Program students utilize the library for research projects.

Technology: All classrooms and laboratories have Smart Systems that are utilized in all courses. Students must access the learning management system for syllabi, lecture presentations, laboratory manuals, clinical notebooks and other supplemental material. Students are encouraged to use technology in classroom presentations.

Health Program Advising (HPA): Students are directed to HPA for assistance in the application process of the MLS program as well as guided pathways to complete the program in the most efficient manner.

Disability Resource Center (DRC): Students are encouraged to seek the assistance of the DRC if they have a qualifying disability in order to increase their chances of success in the program.

Student Services/Retention: Students who are having difficulties in coursework are referred via the "e-lert" system in order to increase their chances of success in the program.

Testing Center: The testing center is utilized by students in on-line sections and by students needing to make-up an examination.

QUALITY:

7 Does this program have an advisory board, or does the department have an advisory board relevant to this program? Describe briefly.

The Clinical Laboratory Advisory Committee is composed of the Program Director, program faculty, community members, and representatives from the clinical affiliate sites. The Advisory Committee meets throughout the year to evaluate curriculum changes and address program concerns.

8 If this program has a specialized accreditation, is this accreditation necessary for alumni licensure or employability?

The MLS program has a specialized accreditation through the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).

NAACLS accreditation is necessary for students to challenge the American Society of Clinical Pathologists (ASCP) certification examination under Route 1 guidelines. However, students are eligible to challenge the Medical Technologist examination given by American Medical Technologists (AMT). Both the ASCP and AMT certifications are accepted by the State of Nevada for licensure.

9 How and to what extent does this program contribute to CSN's regional or national reputation?

Graduates of the CSN CLS programs are well respected. Employer surveys are overwhelmingly positive.

Specialized national accreditation gives CSN national recognition.

DEMAND:

10 Describe the level and nature of external demand for this program (for example, occupational data, labor statistics, employer surveys, student surveys, etc.)?

According the U.S. Bureau of Labor statistics, job prospects for Medical Laboratory Scientists are best for persons who complete an accredited educational program and earn a professional certification. Nationally employment rates are expected to increase by 12%, and in the State of Nevada the projection is 21%.

11 Describe the level and nature of external financial or practical support for this program (for example, grants, donations, employer or clinical partnerships, etc.)?

Our accrediting body dictates financial resources “for continued operation of the educational program” and “each student must have reasonable access to and experience with modern equipment and supplies”. To this end, our programs have been highly funded through grant funds, with the acquisition of approximately $100,000 in state-of-the-art equipment for our students in the last 5 years.

Practical support is given through our clinical affiliate sites as they provide training during the student’s clinical rotation in all areas of the laboratory. In addition, local affiliates support the program through the donation of expired reagents or reagents or kits no longer in use by the facility.

12 What other options exist for students in the region to earn this degree or certificate?

The College of Southern Nevada offers the only Clinical Laboratory Science degrees in the state.

National Accrediting Agency
for Clinical Laboratory Sciences

October 13, 2017

Michael D. Richards, PhD
President
College of Southern Nevada
6375 West Charleston Boulevard - W32E
Las Vegas, NV 89146

Dear President Richards:

Enclosed is the NAACLS Board of Directors' official accreditation award for your Medical Laboratory Scientist program from the September 29, 2017 meeting.

This letter represents formal action by NAACLS.

Sincerely,

Yasmen Simonian, PhD, MLS(ASCP)^{CM}, FASAHP President,
NAACLS Board of Directors

cc: Heidi C. Schneiter, MEd, MT(ASCP), Program Director
Joshua M. Hamilton, RN-BC, FNP-C, PMHNP-BC, CNE, Dean, Engelstad School of Health Sciences

Enclosure: · NAACLS Board of Directors' Accreditation Award

5600 N. River Road, Suite 720 Rosemont, IL 60018
773.714.8880, 773.714.8886 (fax), info@naacls.org
www.naacls.org

NAACLS BOARD OF DIRECTORS' ACCREDITATION AWARD

The Progress Report from the Medical Laboratory Scientist Program of **College of Southern Nevada** in **Las Vegas, Nevada,** addressing Standards 15-18 is deemed satisfactory.

This report is recommended as satisfactory but this does not predetermine an acceptable finding on these same issues at the next review.

Heidi C. Schneiter, MEd, MT (ASCP) is recognized as Program Director.

Yasmen Simonian, PhD, MLS(ASCP)^{CM}, FASAHP
NAACLS Board of Directors

Dianne M. Cearlock, PhD, MT(ASCP) President,
Chief Executive Officer

September 29, 2017

5600 N. River Road, Suite 720 Rosemont, IL 60018
773.714.8880, 773.714.8886 (fax), info@naacls.org
www.naacls.org

From: Edward Rotchford
To: Schneiter, Heidi
Subject: NAACLS Extension of Accreditation for combined review
Date: Friday, May 20, 2016 12:59:02 PM
Importance: High

This email constitutes official correspondence from NAACLS.

If you require a paper copy, please print this email for your records.

NAACLS
National Accrediting Agency for Clinical Laboratory Sciences

May 20, 2016

Heidi C. Schneiter, MEd, MT(ASCP)
Program Director
College of Southern Nevada
6375 W. Charleston Blvd, W1A
Las Vegas, NV 89146-

Dear Ms. Schneiter,

We have received and approved your request for a combined review of your MLS and MLT programs, resulting in a two (2) year extension of accreditation for your MLT program through April 30, 2020. The following renewal dates will apply:

- Self-study documents will be due on **April 1, 2019**
- A joint site visit will be scheduled during **Fall 2019**

There will be no subtractions to the next MLT accreditation award due to a one-time forgiveness extension given to align cycles.

Please contact me if you have any questions.

Sincerely,

Edward Rotchford
Accreditation Specialist

This email constitutes official correspondence from NAACLS. If you require a paper copy, please print this email for your records.

National Accrediting Agency
for Clinical Laboratory Sciences

April 17, 2015

Michael D. Richards, PhD
President
College of Southern Nevada
6375 West Charleston Boulevard - W32E
Las Vegas, NV 89146

Dear President Richards:

Enclosed is the NAACLS Board of Directors' official accreditation award for your Medical Laboratory Scientist program from the April 9, 2015 meeting.

The Board of Directors' award is based on the initial accreditation review process that included a site visit of your program during fall of 2014.

Accreditation for your program will continue until April 30, 2020. As a result, your program will commence renewal of accreditation with submission of the Self-Study Report on April 1, 2019 and the scheduling of a site visit during fall of 2019. We provide this information to assist you in your program's administrative and financial planning.

This letter and the accompanying award represent formal accreditation by NAACLS. The NAACLS Certificate of Accreditation will be forwarded to the Program Director.

Sincerely,

Fred Rodriguez, MD

President, NAACLS Board of Directors

cc: Heidi C. Schneiter, MEd, MT(ASCP), Program Director Patricia R. Castro, EdD, MT(ASCP)BB, Dean
Enclosure: · NAACLS Board of Directors' Accreditation Award

NACLS BOARD OF DIRECTORS' ACCREDITATION ACTION

The Medical Laboratory Science Program of **College of Southern Nevada** in **Las Vegas, Nevada** is awarded Initial Accreditation for **five (5) years**.

This initial program must submit a Progress Report documenting compliance with the following Standards **in triplicate** by **April 1, 2017**.

Standard 15	**Systematic Review** There must be a mechanism for continually and systematically reviewing the effectiveness of the program to include survey and evaluation instruments that incorporate feedback from a combination of students, employers, faculty, graduates, exit or final examinations, and accreditation review.
Standard 16	**Outcome Measures** A review of outcomes measures (e.g. external certifying examination results, results from capstone projects) from the last three active years must be documented, analyzed and used in the program evaluation.
Standard 17	**Graduation and Placement Rates** A review of graduation rates and placement rates must be documented, analyzed and used in the program evaluation.
Standard 18	**Program Evaluation and Modification** The results of program evaluations must be documented and reflected in ongoing curriculum development and program modification, followed by an analysis of the effectiveness of any changes implemented.

Failure to submit the required report by the due date may result in Administrative Probation.

Heidi C. Schneiter, MEd, MT(ASCP) is recognized as the Program Director.

Fred Rodriguez, MD
President, NAACLS Board of Directors

Dianne M. Cearlock, PhD
Chief Executive Officer

April 9, 2015

Area of Concern & Action Form

Discipline: Clinical Laboratory Science

Department or Academic Unit: BAS-MLS

Academic Year: 2018-2019

Identified Area of Concern: Clinical Practicum Sites

Clinical Laboratory Science (CLS) students participate in multiple clinical practicum rotations following completion of their didactic courses. Over the past five years, the number of laboratory clinical practicum sites has decreased locally. There are a number of reasons for the decline such as, lack of staff at the clinical sites; consolidation of specialized laboratory testing to a core lab; and hospital corporatization. For example, Valley health Systems (VHS) has consolidated microbiology laboratory testing for all six VHS hospitals into one core laboratory. This reduction in clinical practicum sites may have an impact on student success and the ability of the CLS program to expand.

Action Plan

CLS program director and faculty have fostered relationships with various clinical rotation site administrators. In order to maintain and possibly increase the number of clinical sites, CLS faculty will schedule on site visits with both current and non-participating site administrators. Additionally, the option of setting up a simulation laboratory for specialized rotations in Microbiology and Blood Bank will be explored. The decrease in clinical practicum sites has been recognized as a nationwide issue and simulation laboratories have become an acceptable alternative for the decrease in clinical practicum sites.

Department Chair _____ Date _____

Dean _____ Date _____

Area of Concern & Action Plan

Discipline: Clinical Laboratory Science

Department or Academic Unit: BAS-MLS

Academic Year: 2018-2019

Identified Areas of Concern: Aging Equipment and Service Agreements

The CLS program has been the fortunate recipient of Perkins grant money for purchase of a variety of clinical laboratory equipment. The standard life expectancy of laboratory equipment is five years. The purchase of an annual service agreement can increase the equipment life span by another four to five years. None of the CLS laboratory equipment are covered by service agreements. The equipment is aging and replacement parts are difficult to find. Discussions with CSN Office of Sponsored Projects have resulted in different responses as to whether service agreements using Perkins grant funding is an allowable item. Without service agreements or a replacement plan, CLS equipment will eventually become non-operational. CLS student success will be impacted due to lack of functional equipment for learning proper laboratory techniques.

Action Plan:

During the last National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) accreditation site visit in 2014, the committee was impressed with the wide variety of equipment utilized in the CLS teaching laboratories. CLS faculty is committed to maintaining and upgrading laboratory equipment to provide students with the most realistic learning experience. The CLS program will continue to apply for Perkins grant funding for replacement equipment and will continue to try to get a definitive answer regarding use of Perkins grant dollars for service agreements. Additionally, CLS faculty will develop a rubric for rating replacement equipment to ensure that the most reliable and cost efficient equipment is chosen for purchase.

_____ _____

Department Chair Date

_____ _____

Dean Date

_____ _____

VPAA Date