

# University of Alaska Anchorage

# A.A.S. Medical Laboratory Technology and

# BS Medical Technology Articulated Program

# Educational Effectiveness

# Assessment Plan

**Adopted by**

**The Medical Laboratory Science Faculty**

**August 2017**

Reviewed with curriculum changes by the Academic Assessment Committee as an information item: 4/5/19

Reviewed as an information item by the Faculty Senate: 5/3/19

Reviewed by the Academic Assessment Committee: 10/20/17

Reviewed as an information item by the Faculty Senate: 11/3/17

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## Mission Statement

 The mission of the Medical Laboratory Science department is to graduate competent and ethical clinical laboratory professionals with the knowledge and the skills for career entry. It is also the department’s mission to prepare graduates for leadership roles in the clinical laboratory and professional organizations and to instill an understanding of the need for maintaining continuing competency in a rapidly changing and dynamic profession.

## Program Introduction

The Medical Laboratory Technology (AAS-MLT) and Medical Laboratory Science (BS-MLS) Programs at the University of Alaska Anchorage have been approved by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) as an articulated program. The programs are designed as career ladder programs with at least 75% overlap. They are housed in the same academic unit with the same faculty. Except for the Blood Bank of Alaska and the State Public Health Laboratory, the same clinical facilities are used for both programs. Self-studies and site visits by NAACLS have been combined reducing accreditation fees and the number of hours UAA faculty and clinical facilities spend producing the documentation for accreditation. The NAACLS accreditation process includes a review of the curriculum to ensure that it meets current standards and has components in the cognitive, psychomotor and affective domains. The site visitors also review course objectives and learning outcomes and verify that the appropriate measures are being used to assess them when programs do not meet the benchmarks established by NAACLS. In addition to reviewing the curriculum, the assessment plan, data and assessment reports are reviewed for evidence of a mechanism for continually and systematically reviewing the effectiveness of the program. The AAS-MLT and BS-MLS programs were reviewed for continuing accreditation in 2014, there were no deficiencies or recommendations and both programs received the maximum 7-year continuing accreditation.

Students enrolled in both programs are encouraged to become active student members in one of the professional organizations. They are given opportunities to attend and volunteer at the state conference and participate in other events sponsored by the state and national organizations. The Institute for Healthcare Improvement (IHI) Open School and the Medical Laboratory Science Club provide opportunities for students to develop their leadership skills. Although the degrees are not contingent upon passing a national certification exam, most graduates take the ASCP Board of Certification (BOC) exam; which is a computer adaptive competency based exam. The majority of health care employers in Alaska require certification. Medical Laboratory Science is a rapidly changing and dynamic field, students are taught the importance of maintaining competency through continuing education and certifying agencies require documentation of continuing education for recertification.

In the past, both programs had open enrollment, entry into the program occurred in either spring or fall semester and students could attend full or part-time. Due to increased interest in the program beginning in the 2017-18 academic year, students will be admitted as pre-majors and must meet specified criteria including a GPA of 2.5 or higher to be accepted into the major. The NAACLS Annual Report requires documentation of enrollment, attrition and graduation rates. Entry into the second half of the program is used to calculate the statistics. For entry into the second half of the program, UAA uses enrollment in the first 200-level course for the AAS-MLT program and enrollment in the first 300-level course for the BS-MLS program.

## Assessment Process Introduction

The assessment plan defines the expected outcomes for the AAS-MLT and the BS-MLS articulated programs and outlines a plan for assessing the achievement of the stated outcomes. This plan was first developed in May 2003 and was revised in 2008, 2010, 2012 and 2014. Direct and indirect measures were developed to assess the program outcomes. The development of the outcomes was accomplished in part by faculty review of the following documents: NAACLS standards and ASCP Board of Certification content guidelines for MLT and MT/MLS professionals. In addition, faculty collaborated with members of clinical facilities in Alaska to determine staffing needs by job description and skill level. Methods used to obtain information from the community were the Community Needs Assessment Survey, input from the Advisory Board, input from the Clinical Coordinators, and the Focus Group discussions from University/Industry Allied Health Forums (April, 2003). NAACLS Standard II addresses assessment and continuous quality improvement. NAACLS accredited programs must have 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. 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. NAACLS accredited programs must also complete an annual survey documenting enrollment, attrition and graduation rates; pass rate on certification exam and employment in the field.

To align with the NAACLS annual report, the evaluation period is defined as July1 to June 30 with three year averages calculated using raw student numbers.

### NAACLS Description of Entry-level Competencies of the Medical Laboratory Technician

At entry-level, the medical laboratory technician will possess the entry-level competencies necessary to perform routine clinical laboratory tests in areas such as Clinical Chemistry, Hematology/Hemostasis, Immunology, Immunohematology/Transfusion Medicine, Microbiology, Urine and Body Fluid Analysis and Laboratory Operations. The level of analysis ranges from waived and point of care testing to complex testing encompassing all major areas of the clinical laboratory. The medical laboratory technician will have diverse functions in areas of pre-analytical, analytical and post-analytical processes. The medical laboratory technician will have responsibilities for information processing, training and quality control monitoring wherever laboratory testing is performed.

 At entry-level, the medical laboratory technician will have the following basic knowledge and skills:

* Application of safety and governmental regulations compliance;
* Principles and practices of professional conduct and the significance of continuing education;
* Communications sufficient to serve the needs of the patients, the public and members of the health care team.

### NAACLS Description of Entry-level Competencies of the Medical Laboratory Scientist

 At entry-level, the medical laboratory scientist will possess entry-level competencies necessary to perform the full range of clinical laboratory tests in areas such as Clinical Chemistry, Hematology/Hemostasis, Immunology, Immunohematology/Transfusion Medicine, Microbiology, Urine and Body Fluid Analysis, Laboratory Operations, and other emerging diagnostics and will play a role in the development and evaluation of test systems and interpretive algorithms. The medical laboratory scientist will have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed or performed.

At entry-level, the medical laboratory scientist will have the following basic knowledge and skills:

* Application of safety and governmental regulations and standards as applied to clinical laboratory science;
* Principles and practices of professional conduct and the significance of continuing professional education;
* Communications sufficient to serve the needs of patients, the public and members of the health care team;
* Principles and practices of administration and supervision as applied to clinical laboratory experience;
* Educational methodologies and terminology sufficient to train/educate users and providers of laboratory services;
* Principles and practices of clinical study design, implementation and dissemination of results.

## Program Outcomes

Goal

To graduate competent and ethical professionals with the knowledge and skills necessary to work as entry-level medical laboratory technicians/medical laboratory scientists as defined by the National Accrediting Agency of Clinical Laboratory Science (NAACLS) standards, and by national examination content guidelines.

Outcomes

AAS-MLT graduates will

* Demonstrate entry-level competencies for medical laboratory technicians in the following disciplines: Hematology, Chemistry, Immunology, Blood Bank, Urine and Body Fluid Analysis, Microbiology and Laboratory Operations.
* Demonstrate professional behavior including sound work ethics, cultural responsiveness and appearance while interacting with patients and healthcare professionals.

BS-MLS graduates will

* Demonstrate entry-level competencies for medical laboratory scientists in the following disciplines: Hematology, Chemistry, Immunology, Blood Bank, Urine and Body Fluid Analysis, Microbiology and Laboratory Operations.
* Demonstrate professional behavior including sound work ethics, cultural responsiveness and appearance while interacting with patients and healthcare professionals.

Goal

To instill an understanding of the need for maintaining continuing competency in a rapidly changing and dynamic profession.

Outcome

AAS**-** AAS-MLT and BS-MLS graduates will

* Demonstrate continuing competency by certification maintenance.

Goal

Develop graduates’ commitment to the laboratory profession by providing students opportunities to participate in professional organizations and mentoring them for leadership positions within the organizations.

Outcomes

AAS-MLT and BS-MLS graduates will

* Demonstrate a commitment to the laboratory profession through active involvement in professional organizations.

Goal

To provide graduates with sufficient understanding of research design/practice to evaluate published studies as an informed consumer.

Outcomes

BS-MLS graduates will

* Evaluate published studies as an informed consumer.

Goal

To provide graduates with sufficient understanding of education methods to provide training for laboratory staff, other healthcare professionals and patients.

Outcomes

BS-MLS graduates will

* Use educator skills to create and deliver an instructional unit.

Goal

To provide graduates with an understanding of financial operations, marketing and human resource management of the clinical laboratory to enable cost-effective high quality, value added laboratory services.

Outcomes

BS-MLS graduates will

* Use laboratory management skills to plan, organize, staff and cost out a new clinical laboratory service.

The outcomes used to assess related instruction in communication, mathematics and human relations for the AAS in Medical Laboratory Technology include:

* Demonstrate professional behavior including sound work ethics, cultural responsiveness and appearance while interacting with patients and healthcare professionals.

This outcome is measured using the Core Abilities Checklist. The clinical trainers assess the student core abilities during their clinical practicum. Employers are also asked if the recent graduate has the core abilities required for entry-level employment. Items on the Core Abilities checklist that are specific to related instructions in communications and human relations include:

* + Understands basic English necessary for the technical field (verbal and written instructions).
	+ Demonstrates interpersonal and teamwork skills.
	+ Maintains Professional demeanor in routine and stressful situations and maintains professional integrity.
* Demonstrate entry-level competencies for **medical laboratory technicians** (AAS-MLT) in the following disciplines: Hematology, Chemistry, Immunology, Blood Bank, Urine and Body Fluid Analysis, Microbiology and Laboratory Operations.

All of the disciplines require that students perform calculations and statistical analyses to demonstrate entry-level competencies. Clinical trainers assess entry-level competencies using Task Objectives for each discipline. Employers are also asked how well the curriculum prepared the graduate for entry-level employment. Examples of items on the Task Objectives specific to related instructions in mathematics are:

* + Demonstrate proficiency in performing manual calculations for LDL and % saturation.
	+ Demonstrate proficiency diluting out of range test results and manually calculating the reportable results.
	+ Demonstrate proficiency performing 24-hour urine testing and manually calculating the results as available

### Table 1: Association of Assessment Measures to AAS-MLT Program Outcomes

|  | Task Objectives Practicum | Core AbilitiesPracticum | Certification Exam Pass Rate | Graduate Survey | Employer Survey  | Alumni Survey | Job Placement Rate  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Demonstrate entry-level competencies for **medical laboratory technicians** (AAS-MLT) in the following disciplines: Hematology, Chemistry, Immunology, Blood Bank, Urine and Body Fluid Analysis, Microbiology and Laboratory Operations. | 1 | 0 | 1 | 1 | 1 | 0 | 1 |
| Demonstrate professional behavior including sound work ethics, cultural responsiveness and appearance while interacting with patients and healthcare professionals. | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Demonstrate continuing competency by certification maintenance.  | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Demonstrate a commitment to the laboratory profession through active involvement in a professional organization. | 0 | 0 | 0 | 0 | 0 | 1 | 0 |

0 = Measure is not used to measure the associated outcome.

1 = Measure is used to measure the associated outcome.

### Table 2: Association of Assessment Measures to BS-MLS Program Outcomes

|  | Task Objectives Practicum | Core AbilitiesPracticum | Certification Exam | Article Critique | Research Exam | Management Exam | Management Project | Education Exam | Instructional Unit | Graduate Survey | Employer Survey  | Alumni Survey | Job Placement  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Demonstrate entry-level competencies for **medical laboratory scientist** (BS-MLS) in the following disciplines: Hematology, Chemistry, Immunology, Blood Bank, Urine and Body Fluid Analysis, Microbiology and Laboratory Operations. | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |
| Demonstrate professional behavior including sound work ethics, cultural responsiveness and appearance while interacting with patients and healthcare professionals. | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Demonstrate continuing competency by certification maintenance. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Demonstrate a commitment to the laboratory profession through active involvement in a professional organization. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Evaluate published studies as an informed consumer. | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Using educator skills to create and deliver an instructional unit. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Use laboratory management skills to plan, organize, staff and cost out a new clinical laboratory.  | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

0 = Measure is not used to measure the associated outcome.

 1 = Measure is used to measure the associated outcome.

## Assessment Measures

A description of the measures used in the assessment of the program outcomes and their implementation are summarized in Table 3 below. The measures and their relationships to the program outcomes are listed in Table 1 and Table 2, above. There is a separate appendix for each measure that describes the factors that affect the results and give examples of the measures and how they are implemented.

### Table 3: Program Outcomes Assessment Measures and Administration

| Measure | **Description** | **Frequency/ Start Date** | **Collection Method** | **Administered by** |
| --- | --- | --- | --- | --- |
| Task Objectives Evaluation Form | Evaluation forms completed by clinical site trainers | Compiled annually and reported as a running 3-year average | ObservationLikert Scale | Practicum Sites |
| Core Abilities Evaluation Form | Evaluation forms completed by clinical site trainers | Compiled annually and reported as a running 3-year average | Observation% Yes  | Practicum Sites |
| CertificationExam |  Board of Certification Computer Adaptive Exam for MLT (AAS) or MLS (BS) | Compiled annually and reported as a 3-year average | Electronic Report of Scaled Scores and Pass Rate | ASCP  |
| Research Article Critique | Grade on research article critique in MEDT A401 | Compiled annually and reported as a 3-year average | Class average | Instructor MEDT A401 |
| Research Exam | Exam grade Research Design MEDT A401 | Compiled annually and reported as a 3-year average | Class average | Instructor MEDT A401 |
| Instructional Unit | Grade on instructional unitMEDT A302 | Compiled annually and reported as a 3-year average | Class average | Instructor MEDT A302 |
| Education Exam | Exam grade Education Unit MEDT A302 | Compiled annually and reported as a 3-year average | Class average | Instructor MEDT A302 |
| Management Project | Grade on Management Project MEDT A302 | Compiled annually and reported as a 3-year average | Class average | Instructor MEDT A302 |
| Management Exam | Exam grade Management Unit MEDT A302 | Compiled annually and reported as a 3-year average | Class average | Instructor MEDT A302 |
| Recent Graduate Survey | Survey sent to recent program graduates | Sent 6 months post graduation, compiled annually and reported as 3 year average | Self-report | MLS Department |
| Employer Survey | Survey sent to employers of recent graduates | Sent 6 months post graduation, compiled annually and reported as a 3-year average | Self-report | MLS Department |
| Alumni Survey | Survey sent to program alumni | Sent every 3 years | Self-report | MLS Department |
| Job Placement | Graduates notify program director | Compiled annually reported as a 3-year average | Self-report | MLS Department |

## Assessment Implementation & Analysis for Program Improvement

General Implementation Strategy

 The recent graduate survey is administered semi-annually for both the AAS MLT and BS-MLS Programs using Qualtrics to administer the survey and analyze the data. The employer survey is e-mailed to employers semi-annually. Employers have the option of completing a paper survey or completing a Qualtrics survey. Alumni Surveys are sent to all alumni every 3 years.

Method of Data Analysis and Formulations of Recommendations for Program Improvement

 SPSS and Excel are used for data analysis. The data is compiled annually. The annual number of graduates from the articulated program is limited due to the space limitations of the UAA classroom and student laboratory and the limited number of clinical sites for student practicums. Due to the small sample size three year averages are used to assess the data.

 The program faculty will meet at least once a year to review the data collected using the assessment measures. Review of the annual report should result in recommendations for program changes that are designed to enhance performance relative to the program’s outcomes. The results of the data collection, an interpretation of the results, and the recommended programmatic changes are forwarded to the Dean and the office of Academic Affairs by October. The Assessment Survey must be completed by June 15th. A plan for implementing the recommended changes, including advertising the changes to all the program’s stakeholders, will be developed during the annual review. Any changes will be discussed with the Program’s Advisory Board and Clinical Coordinators during the August meeting prior to start of school year.

 The proposed programmatic changes may be any action or change in policy that the faculty deems as being necessary to improve performance relative to the program’s outcomes. Recommended changes should also consider workload (faculty, staff, and students), budgetary, facilities, and other relevant constraints. Changes may include:

* Changes in course content, scheduling, sequencing, prerequisites, delivery methods, etc.
* Changes in faculty/staff assignments
* Changes in advising methods and requirements
* Addition and/or replacement of equipment
* Changes to facilities

Modification of the Assessment Plan

 The faculty, after reviewing the collected data and the processes used to collect it, may decide to alter the assessment plan. Changes may be made to any component of the plan, including the goals, outcomes, assessment measures, or any other aspect of the plan. The changes are to be approved by the faculty of the program. The modified assessment plan is reviewed by the curriculum assessment committees and the Dean before being reviewed by the Faculty Senate Academic Assessment Committee.

## Appendix A: Task Evaluation During Practicum

Measure Description:

 Clinical trainers observe the student’s performance and complete the Task Objective forms during the students’ practicum. The students are evaluated on their ability to perform specific tasks in each area of their clinical rotations. Separate tasks lists have been designed for MEDT A395 Medical Laboratory Technology Practicum for students in the AAS-MLT Program and for MEDT A495 Medical Laboratory Science Practicum for students enrolled in the BS-MLS Program. The tasks lists are based on NAACLS standards and the ASCP content guidelines for entry-level competencies and are updated when the standards and guidelines are revised. The scores are based on a student’s terminal performance of the task being graded and reflect entry-level competence. A sample evaluation and criteria for scoring for Urinalysis are provided on the next 3 pages. Similar evaluations are used for each area of the clinical rotations. The clinical rotations include: hematology, urinalysis, clinical chemistry, microbiology, transfusion medicine, phlebotomy and processing, State Public Health Lab and Blood Bank of Alaska. The last two rotations are only for the BS-MLS Program. Students in the BS-MLS also complete advanced core lab. The advanced core lab is held in the student lab on campus and the students’ performance is evaluated by UAA faculty.

Factors that affect the collected data:

* Scoring is somewhat subjective
* Students are aware of impact of scoring on their UAA practicum grade
* Interrater reliability

How to interpret the data:

 Criteria are provided to clinical trainers for scoring to help reduce any subjectivity or bias. On-site training for the clinical trainers and workshops are provided by UAA faculty when major changes are made to the curriculum or when requested by the clinical liaisons at the clinical facilities.

 Task evaluations provide the program with data to assess the cognitive and psychomotor skills taught in the prerequisite courses for MEDT A395 Medical Laboratory Technology Practicum and MEDT A495 Medical Laboratory Science Practicum to determine if students are adequately prepared for their clinical training. The data also assesses entry-level competencies of students graduating from the program.

 The evaluation forms are designed by UAA faculty and are part of the practicum notebook that the students take to their clinical sites. The clinical trainers complete the evaluation forms. The practicum coordinator reviews the results with the student and provides a copy of the students’ average scores for each rotation to the assessment coordinator. The assessment coordinator averages the student scores in each clinical rotation to determine programs scores for the assessment period. A 1-5 Likert Scale was used previously. The scale was changed to make it easier for clinical trainers to evaluate students. Current scores are converted to the 1-5 scale for comparison to previous years. The average scores are used to assess the following outcome:

**Outcome**

Demonstrate entry-level competencies **for medical laboratory technicians** (AAS-MLT) or **medical laboratory scientists** (BS-MLS) in the following disciplines: Hematology, Chemistry, Immunology, Blood Bank, Urine and Body Fluid Analysis, Microbiology and Laboratory Operations.

**Benchmark:** program average for task objectives: not met <3; met 3-4; exceeded>4

**Urinalysis Task Objectives**

**Evaluation Key for Tasks that are performed:**

| **Letter** | **Evaluation** | **Description** |
| --- | --- | --- |
| **E** | **Exceptional** | Student performs independently after proper instruction and orientation; shows initiative and rarely needs to consult with trainers. Tasks are performed essentially error-free. |
| **A** | **Acceptable** | This is the expected performance of an entry- level tech after instruction and orientation. Manuals and other resources may occasionally be used and students may need to consult trainers occasionally for clarification but otherwise should be able to perform independently.  |
| **U** | **Unacceptable** | Performance is below that of entry- level tech after orientation and instruction. Frequent consultation with trainers is required and errors are noted after repeated attempts to remediate. Any violation of ethics, safety or patient privacy rules would be another reason for this evaluation. **This score must be documented and the UAA practicum coordinator consulted** |
| **NA** | **Not assessed** | Task not performed in lab, no samples available etc. |

| **Task** | **Level of Achievement** | **Evaluation** | **Trainer’s Initials** | Date |
| --- | --- | --- | --- | --- |
| 1. Demonstrate knowledge of and proficiency performing Daily/Weekly Preventative Maintenance of equipment used for routine urinalysis testing.
 | Perform | E | A | U | NA |  |  |
| 1. Discuss additional maintenance procedures performed in the Urinalysis section.
 | Discuss | Not scored |  |  |
| 1. Participate in all quality control measures on a daily basis.
 | Perform | E | A | U | NA |  |  |
| 1. Discuss procedure for resolution of out of control results.
 | Discuss | Not scored |  |  |
| 1. Evaluate cumulative QC date for abnormalities.
 | Observe | Not scored |  |  |
| 1. Evaluate specimens for acceptability and take necessary action if unacceptable.
 | Perform | E | A | U | NA |  |  |
| 1. Demonstrate the ability to operate instrumentation used for routine urinalysis testing.
 | Perform | E | A | U | NA |  |  |
| 1. Demonstrate proficiency in performing the manual dipstick method.
 | Perform | E | A | U | NA |  |  |
| 1. Recognize interferences when they occur and resolve discrepant results.
 | Perform | E | A | U | NA |  |  |
| 1. Perform a minimum of 20 urine microscopic exams. At least 5 of these should be by standard microscopy (i.e. not automated)
 | Perform | E | A | U | NA |  |  |
| 1. Demonstrate proficiency in performing the following tests if available:
 | Perform | E | A | U | NA |  |  |
| 1. Clinitest
 | Perform | E | A | U | NA |  |  |
| 1. Sulfosalicylic Acid
 | Perform | E | A | U | NA |  |  |
| 1. Urine pregnancy test
 | Perform | E | A | U | NA |  |  |
| 1. Ictotest
 | Perform | E | A | U | NA |  |  |
| 1. Acetest
 | Perform | E | A | U | NA |  |  |
| 1. Fecal and Gastric Occult Blood
 | Perform | E | A | U | NA |  |  |
| 1. Others (please specify)
 | Perform | E | A | U | NA |  |  |

| **Instrument/ Methods** | **Instrument used for training** |
| --- | --- |
| Urinalysis Analyzer(s) |  |
| Point-of-care Analyzers (located in the lab) |  |
| Other (please list) |  |
|  |  |
|  |  |
|  |  |
|  |  |

Instrumentation used for training:

**Clinical Rotation Grade Form**

**Medical Laboratory Science**

| Student Name | Facility / Section | Clinical Trainer |
| --- | --- | --- |

1. Does the student have the necessary background knowledge to perform the tasks in this discipline? Please refer to the objectives which were completed. List specific areas of knowledge deficiency.

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1. List any strong points you observed.

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1. List any categories in which you would recommend improvement.

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Clinical Instructor signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Appendix B: Certification Exam

Measure Description:

 This measure includes results from the ASCP Board of Certification (BOC) computer adaptive competency based exam. The BOC uses a criterion-referenced examination model, which consists of three interrelated components: competency statements, content outline and taxonomy. The competency statements describe the skills and tasks the Medical Laboratory Technician (MLT) or Medical Laboratory Scientist (MLS) should be able to perform. The content outline delineates general categories or subtest areas of the examination and the taxonomy levels describe the cognitive skills required to answer the question. Three taxonomy levels are included in the exam: recall, interpretive skills and problem solving skills. Graduates from the AAS-MLT program are qualified to take the MLT exam and BS-MLS graduates are qualified to take the MLS exam. The exam results are broken down by discipline (hematology, chemistry, immunology, blood bank, urine and body fluid analysis, and microbiology and laboratory operations) this allows the program to target course specific areas for improvement. The degrees are not contingent upon passing a certification exam however; most employers require certification within one year of graduation. NAACLS has set a benchmark for certification pass rates. Accredited programs must demonstrate an average of at least 75% pass rate on the ASCP-BOC examinations, for those who take the exam within the first year of graduation as calculated by the most recent three years.

Factors that affect the collected data:

* A student may not give permission for the program director to receive a copy of the results.
* Students may miss or mislabel the school code when completing certification exam applications.
* Students may delay taking the exam.
* Sample size

How to interpret the data:

 The BOC provides the program director with the student’s content and final scores plus the national averages for that particular testing period. Annual pass rates (July-June) and the three-year average are calculated to determine if the program has met the NAACLS benchmark. Three-year discipline averages are calculated and compared to university based national averages to help determine which areas of the curriculum may need improving..

 The exams are designed and administered by the certifying agency. The program director accesses the exam result through a password protected website. The assessment coordinator compiles the data and analyzes it.

**Outcome**

Demonstrate entry-level competencies **for medical laboratory technicians** (AAS-MLT) or **medical laboratory scientists** (BS-MLS) in the following disciplines: Hematology, Chemistry, Immunology, Blood Bank, Urine and Body Fluid Analysis, Microbiology and Laboratory Operations.

**Benchmarks:** Three-year pass rate on ASCP BOC: <75% not met; 75%-85% met and >85% exceeded. Program average for total score and scores on the content areas compared to average for all universities: not met UAA>50 points less than average all universities; met UAA +/-50 points from average of all universities and exceeded UAA > 50 points more than average all universities.

## Appendix C: Recent Graduate Survey

Measure Description:

 The recent graduate survey asks Medical Laboratory Science graduates to provide their current employment status and evaluate their readiness for employment after 6 months in the workplace. Additionally, students are asked about their continuing education activities and membership in professional organizations. A sample of the survey instrument is included on the following page.

Factors that affect the collected data:

* Response rate
* Sample size
* Loss of Contact

How to interpret the data:

 The survey was designed by the faculty and is sent to graduates six months after program completion. Qualtrics software is used to administer and analyze the survey. The assessment coordinator compiles the data and analyzes it. The target response rate is 65% or higher. If the response rate is <65%, a note will be included in the report stating that the data may not be accurate due to the low response rate.

Questions 1, 5, and 6 provide information on the employment activities of recent graduates. Questions 2 & 3 provide information on level of commitment to the profession after graduation. Questions 7 & 8 provide the MLS Department with information on the quality of education received at UAA relative to readiness for the workplace.

**Question on Survey**

How do you feel the program prepared you for entry-level employment?

Not prepared, Prepared, or Well Prepared

**Outcome**

Demonstrate entry-level competencies **for medical laboratory technicians** (AAS-MLT) or **medical laboratory scientists** (BS-MLS) in the following disciplines: Hematology, Chemistry, Immunology, Blood Bank, Urine and Body Fluid Analysis, Microbiology and Laboratory Operations.

**Benchmark:** Percentage of graduates responding:>10% not prepared-not met; <10% not prepared and <50% well prepared-met; <10% not prepared and >50% well prepared- exceeded.

**UNIVERSITY OF ALASKA ANCHORAGE**

**MEDICAL LABORATORY SCIENCE DEPARTEMENT**

**GRADUATE STUDENT SURVEY**

**STUDENT: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ YEAR GRADUATED: \_\_\_\_\_\_\_\_\_ DATE: \_\_\_\_\_\_\_\_**

**PROGRAM: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

| Question | Response |
| --- | --- |
| Since graduating from the program, have you: | \_\_\_ Worked in the field: Worked in other jobs:\_\_\_\_\_\_\_ Returned to School: Where \_\_\_\_\_\_\_\_\_\_\_\_\_ Major\_\_\_\_\_\_\_\_\_\_ Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| What laboratory professional organization (s) do you belong to? | None \_\_\_\_ ASCP\_\_\_\_\_\_ ASCLS\_\_\_\_\_ CLSA\_\_\_\_ AMT\_\_\_\_ |
| Since graduating have you been actively involved in a professional organization by being an event volunteer, committee or board member? | Yes\_\_\_\_\_ No\_\_\_\_\_\_ |
| Have you participated in continuing education during last six months? | Yes\_\_\_\_\_ No\_\_\_\_\_\_ |
| Are you current employed? | Yes \_\_\_\_ No \_\_\_\_ |
| Please list places of employment. | Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Job Title \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Address \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Job Title \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Address \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| How do you feel the program prepared you for entry-level employment? | Not prepared \_\_\_\_ Prepared \_\_\_\_ Well prepared\_\_\_\_Comments: |
| What areas of the curriculum were strongest?What areas of the curriculum were weakest? | Strongest:Weakest: |
| Other comments |  |

## Appendix D: Employer Survey

Measure Description:

 The employer survey asks employers to evaluate their employees who have graduated from UAA for entry-level competence and professional capabilities. Additionally, employers are asked about staffing needs in their facility. A sample of the survey instrument is included on the following page. Employers of our graduates are clinical laboratories that hire certified medical laboratory technicians and medical laboratory scientists.

Factors that affect the collected data:

* Response rate
* Sample size
* Personal bias when answering narrative questions

How to interpret the data:

 The survey was designed by the faculty and is sent to employers approximately six months from the date their employee completed the program. The assessment coordinator compiles the data and analyzes it. The target response rate is 65% or higher. If the response rate is <65%, a note will be included in the report stating that the data may not be accurate due to the low response rate. Answers to questions 1 – 3 provide basic information on the workplace environment for the particular graduate. Questions 4 – 7 provide information on the quality of education provided by UAA. Question 8 provides the program director with informal information on community needs.

**Question on Survey**

In your opinion, how well did our curriculum prepare the student for entry-level employment at your facility? Not prepared, Prepared, Well Prepared

**Outcome**

Demonstrate entry-level competencies **for medical laboratory technicians** (AAS-MLT) or **medical laboratory scientists** (BS-MLS) in the following disciplines: Hematology, Chemistry, Immunology, Blood Bank, Urine and Body Fluid Analysis, Microbiology and Laboratory Operations.

**Benchmark:** Percentage of employers responding:>10% not prepared-not met; <10% not prepared and <50% well prepared-met; <10% not prepared and >50% well prepared- exceeded.

**Question on Survey**

Does the graduate have the professional capabilities required for their current position? Yes/No

**Outcome**

Demonstrate professional behavior including sound work ethics, cultural responsiveness and appearance while interacting with patients and other healthcare workers.

**Benchmark**: Percentage of employers responding yes graduates have the professional capabilities during the assessment period: <70% not met; 70-85% met ;> 85% exceeded

**UNIVERSITY OF ALASKA ANCHORAGE**

**MEDICAL LABORATORY SCIENCE DEPARTMENT**

**EMPLOYER SURVEY**

**EMPLOYEE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE: \_\_\_\_\_\_\_\_**

**SUPERVISOR \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ FACILITY \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

| Question | Response |
| --- | --- |
| How long has the above graduate worked under your supervision? | Less than 6 months \_\_\_\_ Other \_\_\_\_6 months – 1 year \_\_\_\_ |
| Were you this person’s first supervisor since graduation? | Yes \_\_\_\_ No \_\_\_\_ |
| What is your job title? |  |
| In your opinion, how well did our curriculum prepare the graduate for entry-level employment at your facility? | Not prepared \_\_\_\_ Prepared \_\_\_\_ Well prepared\_\_\_\_Comments: |
| In your opinion, which areas of the curriculum need improvement? |  |
| Does this graduate have the professional capabilities required for their current position? | Yes\_\_\_\_ No\_\_\_\_\_Comments: |
| Would you hire other graduates from our program? | Yes\_\_\_\_ No\_\_\_\_ |
| Is the Medical Laboratory Science Department meeting your current staffing needs? | Yes\_\_\_\_ No\_\_\_\_Comments: |
| Additional Comments |  |

## Appendix E: Alumni Survey

Measure Description:

 The Alumni Survey includes questions on the current employment status of the alumni and whether or not they have advanced in the profession or returned to school to further their education. It also asks questions about continuing education and membership in a professional organization to determine participation and support for the profession. A sample survey is provided on the next page. In 2010 the survey was administered using the Qualtrics survey tool.

As of 2012, the survey is being administered to all alumni every three years.

Factors that affect the collected data:

* Response rate
* Sample size
* Loss of contact

How to interpret the data:

 Questions on current employment status and advancement in the field are analyzed to determine if the graduate has found gainful employment as a laboratory professional. Certification maintenance and membership in professional organization questions are analyzed to determine if alumni are maintaining competency and are actively involved in the profession.

 The survey was designed by the faculty and is sent to alumni on a three year cycle. The assessment coordinator compiles the data and analyzes it. The target response rate is 65% or higher. If the response rate is <65%, a note will be included in the report stating that the data may not be accurate due to the low response rate. If an outcome has more than one score, scores are averaged and the average is reported.

**Question on Survey**

What laboratory professional organization (s) do you belong to? In the last two years, have you been actively involved in the organization by being an event volunteer, committee or board member? \_\_\_% actively involved in a professional organization

**Outcome**

Demonstrate a commitment to the laboratory profession through active involvement in professional organizations.

**Benchmark** % alumni actively involved in the profession: not met <50%; met 50-70%; exceeded >70%

**Question on Survey**

Have you maintained your certification? \_\_\_% maintained certification

**Outcome**

Demonstrate continuing competency by certification maintenance.

**Benchmark** % alumni maintained certification: not met <70%; met 70-85%; exceeded >85%

**UNIVERSITY OF ALASKA ANCHORAGE**

**MEDICAL LABORATORY SCIENCE DEPARTEMENT**

**ALUMNI SURVEY**

**ALUMNI: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ YEAR GRADUATED: \_\_\_\_\_\_\_\_\_ DATE: \_\_\_\_\_\_\_\_**

**PROGRAM: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

| Question | Response |
| --- | --- |
| Since graduating from the program, have you: | \_\_\_ Worked in the field: Worked in another field: \_\_\_\_\_\_\_\_\_ Returned to School; Where \_\_\_\_\_\_\_\_\_\_\_ Major\_\_\_\_\_\_\_\_\_\_ Additional degree(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| If you have obtained an advanced degree how do you feel the UAA program prepared you for this? |  |
| What laboratory professional organization (s) do you belong to? | None\_\_\_\_ ASCP\_\_\_\_\_\_ ASCLS\_\_\_\_\_ CLSA\_\_\_\_ AMT\_\_\_\_ |
| In the last two years, have you been actively involved in the organization by being an event volunteer, committee or board member? | Yes\_\_\_\_ No\_\_\_\_ |
| Have you maintained your certification? | Yes\_\_\_\_ No\_\_\_\_ |
| Are you current employed? | Yes \_\_\_\_ No \_\_\_\_ |
| Have you advanced in the profession (bench technologist to supervisor or technical specialist)? | Yes\_\_\_\_\_ No\_\_\_\_\_ |
| We would like to stay in touch with our alumni, which method works best for you? (Please check all that apply) | Facebook \_\_\_\_\_\_ Newsletter\_\_\_\_\_\_ Reunions \_\_\_\_\_\_E-mail \_\_\_\_\_\_ |
| Other comments |  |

## Appendix F: Professional evaluation during practicum

Measure Description:

 Students are assessed on their core abilities after their first 200-level MEDT class. The faculty reviews the scores with the students and provides recommendations for improvement if needed. The students’ core abilities are assessed again prior to their clinical training. Students must receive a score of “3” or higher in each of the seven core abilities in order to enroll in practicum.

 Clinical trainers complete the Core Abilities Assessment during the student practicums. Program faculty with input from the clinical trainers revised the assessment tool in 2010 to clarify and reduce the number of outcomes assessed. The outcomes relate to the affective domain of the student while in practicum. The students are evaluated in the following areas: commitment to learning, interpersonal skills, communication skills, effective use of time and resources, use of constructive feedback, problem solving and critical thinking and professionalism. A sample evaluation is provided on the next page.

Factors that affect the collected data:

* Scoring is somewhat subjective
* Students are aware of impact of scoring on their UAA practicum grade
* Interrater reliability

How to interpret the data:

 Criteria are provided for clinical trainers for scoring, helping to reduce subjectivity or bias. The information provides the Program with data to assess the quality of education in the affective domain. Students must receive a “yes” score on the first 5 attributes in order to pass practicum. Students receive a grade of 70% for a “yes” on the first five attributes. Scoring “yes” on the additional attributes increases their grade.

 The evaluation was designed by the faculty and is part of the practicum notebook that the students take to their clinical sites. The clinical trainers complete the evaluation. The practicum coordinator reviews the results with the student and provides each student’s average score to the assessment coordinator. The assessment coordinator computes the average score for all students evaluated during the assessment period and reports the three-year running average. The average scores are used to assess the following outcome:

**Outcome**

Demonstrate professional behavior including sound work ethics, cultural responsiveness and appearance while interacting with patients and healthcare professionals.

**Benchmark-** program average on core abilities assessment-not met <70%; met 70-85%; exceeded >85%

**University of Alaska Anchorage**

**Medical Laboratory Science**

**Core Abilities Assessment Guide**

**AAS-MLT/BSMLS**

The Core Abilities Assessment is used to evaluate the student’s professional behavior during their clinical rotations. Review the attributes and associated behaviors on the assessment forms and assess the student’s performance in each by checking the “Yes” box for those behaviors that you believe they perform well in most situations. Check “No” for those behaviors they perform poorly or inconsistently. Your assessment should be based on their current behavior and abilities in the practicum portion of their professional education.

The clinical trainer checklist includes attributes in the following areas: professional demeanor, following procedures and policies, technical competence, commitment to learning, problems solving, communication skills, interpersonal skills, effective use of time and resources, use of constructive feedback, and workplace responsibilities. Students must demonstrate appropriate behavior and be signed off with a Yes on the 5 critical core abilities in order to pass practicum. Document specific examples of No responses for attributes 1 – 5. Scoring with a Yes on the additional attributes will enhance their grade.

 Students should have a separate Core Abilities Assessments for each of the following areas: Phlebotomy and Processing, Core Lab, Transfusion Services, and Microbiology and the Alaska State Public Health Laboratory.

UAA Medical Laboratory Science

Core Abilities Assessment

Student: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Rotation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Attributes 1 – 5 are critical areas for preparation for the workplace. Students must demonstrate positive behavior in each of these in order to pass practicum. **Document examples of No responses for attributes 1 – 5.**

| **Core Ability Demonstrates Behavior** | Yes | No |
| --- | --- | --- |
| 1. Maintains Professional demeanor in routine and stressful situations and maintains professional integrity. Examples: Appropriate handling of unexpected changes, appropriate responses to trainers and co-workers, professional interaction with patients and other healthcare team members, admits error or mistakes, seeks assistance in difficult situations |  |  |
| 2. Follows procedures (without shortcuts) and practicum site policiesExamples: does not deviate from established policies & procedures, questions are directed to the appropriate person, shows attention to detail, is compliant with HIPAA |  |  |
| 3. Demonstrates technical competenceExamples: Able to perform tasks with minimal or no assistance, appropriate use of procedure manuals and reference materials for testing, displays confidence after instruction |  |  |
| 4. Demonstrates appropriate problem solving skills **with trainer assistance** ( recognizes technical problem, clearly communicates to trainer, identifies process for resolution, applies process) |  |  |
| 5. Understands basic English necessary for the technical field (verbal and written instructions) |  |  |

Additional attributes which are important in preparing the student for the workplace. Positive behavior in these will enhance the core abilities portion of the practicum grade.

| **Core Ability Demonstrates Behavior** | Yes | No |
| --- | --- | --- |
| 6. Demonstrates interpersonal and teamwork skillsExamples: functions well with others in the clinical setting, helps others willingly, respects cultural and age differences in others, recognizes impact of non-verbal communication, restates or clarifies messages |  |  |
| 7. Performs assigned tasks in a timely manner and demonstrates the ability to multitask |  |  |
| 8. Seeks unsolicited tasks when assigned work is completed or uses downtime for studying |  |  |
| 9. Uses proper telephone etiquette – critical value calls, inquiries on results, test add-ons, etc. (mark N/A if student is not allowed to use the telephone) |  |  |
| 10. Demonstrates appropriate problem solving skills **without trainer assistance** ( recognizes technical problem, clearly communicates to trainer, identifies process for resolution, applies process) |  |  |
| 11. Demonstrates commitment to learning:* Seeks learning experiences in addition to assigned tasks
* Asks relevant questions
* Seeks outside resources to fill gaps in knowledge
 |  |  |
|  |  |
|  |  |
|  |  |
| 12. Demonstrates appropriate response to constructive criticism* Seeks constructive criticism and integrates feedback from clinical trainer
* Assesses own performance accurately
* Develops a plan of action in response to feedback
* Moves forward when mistakes are made
 |  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| 13. Workplace responsibilities:* Arrives on time for practicum rotations and begins work promptly
* Follows procedures for reporting absences
* Leaves work area clean, neat, and with supplies/reagents replenished
* Informs clinical trainer with leaving work area
 |  |  |
|  |  |
|  |  |
|  |  |
|  |  |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Signature / Date Trainer Signature / Date

## Appendix G: Research Article Critique and Research Exam

Measure Description:

 In order for BS-MLS graduates to evaluate published studies as informed consumers, they must have a basic understanding of research design and be able to apply that knowledge to analyze and critique research. Students demonstrate their knowledge of research design on a computerized exam and they synthesize course concepts and apply them to research in medical laboratory science by analyzing and critiquing a research article provided by the instructor. Both the exam score and article critique are reported in percentages.

Factors that affect the collected data:

* Scoring is somewhat subjective on article critique
* Students are aware of impact of scoring on their MEDT A401 grade
* Instructor bias

How to interpret the data:

 The exam and grading rubric for the article critique are designed by the faculty teaching MEDT A401. The instructor completes the grading rubric for the article critique. Exam scores and grades for the article critique are submitted to the assessment coordinator. The assessment coordinator computes the average score for all students evaluated during the assessment period and reports the three-year average. The data is used to assess the following outcome:

**Outcome**

Evaluate published studies as informed consumer.

**Benchmark** program average on article critique and exam: not met <70%; met 70-85%; exceeded >85%

## Appendix H: Education Exam and Instructional Unit

Measure Description:

 In order to provide quality instruction to co-workers, other healthcare professionals and patients, a medical laboratory scientist must have a basic understanding of teaching methods. Students demonstrate their knowledge of teaching methods on a computerized exam and they synthesize course concepts and apply them by creating and delivering an instructional unit to their classmates. Both the exam score and score on the instructional unit are reported in percentages. The class average is determined and reported as a three-year average.

Factors that affect the collected data:

* Scoring is somewhat subjective on the instructional unit
* Students are aware of impact of scoring on their MEDT A302 grade
* Instructor bias

How to interpret the data:

 The exam and grading rubric for the instructional unit are designed by the faculty teaching MEDT A302. The instructor completes the grading rubric for the instructional unit. Exam scores and grades for the instructional unit are submitted to the assessment coordinator. The assessment coordinator computes the average score for all students evaluated during the assessment period and reports the three-year average. The data is used to assess the following outcome:

**Outcome**

Use educator skills create and deliver an instructional unit.

**Benchmark** program average on instructional unit and exam: not met <70%; met 70-85%; exceeded >85%

## Appendix I: Management exams and Management Project

Measure Description:

 BS-MLS Graduates need an understanding of the financial operations, marketing and human resource management of the clinical laboratory to enable cost-effective high quality, value added laboratory services. Students demonstrate their knowledge of management skills on computerized exams and they apply that knowledge to plan, organize, staff and cost out a new clinical laboratory service. Both the exam score and management project are reported in percentages. The class average is determined and the three-year running average is reported.

Factors that affect the collected data:

* Scoring is somewhat subjective on the management project
* Students are aware of impact of scoring on their MEDT A302 grade
* Instructor bias

How to interpret the data:

 The exam and grading rubric for management project are designed by the faculty teaching MEDT A302. The instructor completes the grading rubric for the management project. Exam scores and grades for the management project are submitted to the assessment coordinator. The assessment coordinator computes the average score for all students evaluated during the assessment period and reports the three-year running average. The data is used to assess the following outcome:

**Outcome**

Use laboratory management skills to plan, organize, staff and cost out a new clinical laboratory service.

**Benchmark** program average on management project and exam: not met <70%; met 70-85%; exceeded >85%

## Appendix J: Job Placement

Measure Description:

 The program director maintains a list of graduates that have provided information on job placement either by e-mail or through the recent graduate survey. Graduates hired for entry-level jobs is an indicator that previous UAA graduates demonstrated entry-level competencies and employers are willing to hire additional UAA graduates.

Factors that affect the collected data:

* Graduates may not report employment or complete the recent graduate survey
* Job market may be saturated and graduates are unwilling to relocate

**Outcome**

Demonstrate entry-level competencies **for medical laboratory technicians** (AAS-MLT) or **medical laboratory scientists** (BS-MLS) in the following disciplines: Hematology, Chemistry, Immunology, Blood Bank, Urine and Body Fluid Analysis, Microbiology and Laboratory Operations.

**Benchmarks:** NAACLS requires accredited programs meet the following benchmark, three year consecutive results of graduate placement rates demonstrates an average of at least 70% of respondent graduates either finding employment in the field or a closely related field, or continued their education within one year of graduation**.**  The benchmark for UAA assessment is: <70% not met; 70-85% met and >85% exceeded.

## Appendix K: Graduation rates

Measure Description:

 The program director maintains a spreadsheet documenting the date students enter the second half of the program and the date they graduate or leave the program. An explanation on why a student left the program is provided when available. UAA does not use a cohort model and students are allowed to attend part-time. Entry into the second half of the AAS-MLT program is defined as enrollment in a student’s first 200-level MEDT course. Entry into the BS-MLS program is defined as enrollment in a student’s first 300-level MEDT course.

Factors that affect the collected data:

* The programs are articulated and students may switch programs once enrolled. This may affect enrollment numbers reported in the NAACLS Annual Survey.

**Outcome**

Graduate competent and ethical clinical laboratory professionals with the knowledge and the skills for career entry

**Benchmarks:** NAACLS requires accredited programs meet the following benchmark, three year consecutive results of graduation rates demonstrating an average of at least 70% of students who have begun the final half of the program go on to successfully graduate from the program as calculated by the most recent three year period.