

University Of Bridgeport Medical Laboratory Science Student Handbook 2014-2015



This handbook contains information concerning the Medical Laboratory Science Program and selected program and university policies. Other resources for program and university policies and procedures are the UB Catalog and the Keys to UB Student Handbook.

(<http://www.bridgeport.edu/academics/registrar/catalog.aspx>)

(<http://www.bridgeport.edu/Media/Website%20Resources/documents/life/KeytoUB2010.pdf>)

Questions regarding program or university policies and procedures should be directed to the MLS Program Director or MLS Education Coordinator. Students who may need an accommodation to meet the MLS program requirements contained herein under essential functions should notify the MLS Program Director prior to entering the program.

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The UB Medical Laboratory Science Program is pursuing accreditation by:

The National Accrediting Agency for Clinical Laboratory Sciences

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University of Bridgeport

Student Handbook

Signature Page

I have received a copy of the UB MLS Student Handbook.

I understand that it is my responsibility to read and become familiar with its contents. I have had an opportunity to ask questions and seek clarification on this material.

I agree to follow the policies outlined in the handbook.

I understand that during the course of my training, policy changes may occur and that I will be given both written and verbal information regarding the changes and that these changes will supersede all previous policies.

Student signature

Date

UB MLS CODE OF ETHICS

AS A CLINICAL LABORATORY PROFESSIONAL, I STRIVE TO:

- PROVIDE ACCURATE AND RELIABLE TEST RESULTS IN A TIMELY AND EFFICIENT MANNER.
- PRESERVE THE DIGNITY AND PRIVACY OF OTHERS
- MAINTAIN AND PROMOTE STANDARDS OF EXCELLENCE IN PERFORMING AND ADVANCING THE ART AND SCIENCE OF MY PROFESSION
- UPHOLD AND MAINTAIN THE DIGNITY AND RESPECT OF OUR PROFESSION
- SEEK TO ESTABLISH COOPERATIVE AND RESPECTFUL WORKING RELATIONSHIPS WITH OTHER HEALTH PROFESSIONALS
- CONTRIBUTE TO THE GENERAL WELL BEING OF THE COMMUNITY.

I WILL ACTIVELY DEMONSTRATE MY COMMITMENT TO THESE RESPONSIBILITIES THROUGHOUT MY PROFESSIONAL LIFE.

UB Mission Statement

The University of Bridgeport offers career-oriented undergraduate, graduate and professional degrees and programs for people seeking personal and professional growth. The University promotes academic excellence, personal responsibility, and commitment to service. Distinctive curricula in an international, culturally diverse supportive learning environment prepare graduates for life and leadership in an increasingly interconnected world. The University is independent and non-sectarian.

—Adopted by the Board of Trustees on April 23, 2004.

Medical Laboratory Science Program Mission Statement

The Medical Laboratory Science Program at UB provides training in state-of-the-art clinical laboratory diagnostic procedures. The program promotes academic excellence, personal responsibility and commitment to service and providing the utmost in quality laboratory testing and patient care.

Program Overview and Educational Philosophy

The Medical Laboratory Science Program at University of Bridgeport is a four-year Bachelor of Science degree program that prepares students for careers in clinical laboratory science or related fields. The first two years are spent taking general education and science foundation courses. The formal Medical Laboratory Science curriculum encompasses the 3rd year of pre-clinical course work and the 4th year of clinical rotations.

The primary goal of the program is to provide both broadly based and specific learning experiences that will result in the development of responsible, competent, entry-level professionals in clinical laboratory science. In addition to the traditional medical laboratory science curriculum, the program also provides upward mobility for associate degree clinical laboratory technicians (CLT/MLT) who wish to obtain a Bachelor of Science degree in medical laboratory science.

The Medical Laboratory Science curriculum emphasizes basic sciences, clinical laboratory sciences, professionalism, communication, education, management, research and critical thinking skills. An essential component of the program includes structured learning experiences in the laboratories of the program's clinical affiliates. Specific learning objectives are used in each clinical course (rotation). This clinical experience allows students an opportunity to learn and practice in a functioning clinical laboratory with teaching technologists (scientists).

Learning Outcomes / MLS Program Goals:

Upon successful completion of the UB MLS program, students will:

Be proficient in performing the full range of clinical laboratory tests in areas such as hematology, clinical chemistry, immunohematology, microbiology, serology/immunology, coagulation, urinalysis, molecular, and other emerging diagnostics.

Be able to participate in the development and evaluation of test systems and interpretive algorithms, hold diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, conduct education, and quality assurance/performance improvement wherever laboratory testing is researched, developed or performed and utilize their knowledge of critical pathways and clinical decision making.

Possess basic knowledge, skills, and relevant experiences in consultative interactions with members of the healthcare team, external relations, customer service and patient education; financial, operations, marketing, and human resource management; information management, and; research design/practice sufficient to evaluate published studies as an informed consumer

Be proficient in maintaining necessary operations for the general functions of the clinical laboratory, including specimen collection.

UB MLS PROGRAM COMPETENCY STATEMENTS

The UB Medical Laboratory Science Program curriculum is designed to provide a variety of learning experiences that will enable students to develop communication skills, critical thinking skills, and to become responsible, competent, entry-level professionals in clinical laboratory science. Consequently an integral part of each of the following competencies is communication skill development, problem-solving and critical thinking skill development, and integration of the theory and practice of clinical laboratory science.

1. Communicate effectively and inspire confidence in patients, colleagues, physicians, and other members of the health care team, and the public.
2. Obtain and/or assure the appropriateness of laboratory specimens utilizing proper techniques in an efficient manner.
3. Process specimens and evaluate specimen acceptability for analysis according to test method protocols and assuring proper sample identification.
4. Perform, record, and report laboratory test results accurately, efficiently, and according to laboratory protocol.
5. Evaluate data generated from the performance of laboratory tests for correlation with clinical conditions, indications for additional testing, and pre-analytical, analytical, and post-analytical errors.
6. Operate, maintain, and troubleshoot commonly used automated instruments and their associated test methods.
7. Recognize and respond to instrument malfunctions or test method variations.
8. Recognize and analyze pre-analytical, analytical, and post-analytical problems in clinical laboratory testing and pursue a logical pattern in identifying the cause and solving the problems.
9. Evaluate instruments and new methods for possible implementation.
10. Establish, evaluate, and monitor a program of quality assurance to include pre-analytical, analytical, and post-analytical criteria.
11. Identify and adhere to all safety guidelines in the collection, processing, testing, and disposal of all biohazardous materials.
12. Identify the roles and functions of the manager and consultant in the clinical laboratory and apply principles of management and consultation skills in the conduct of those functions.
13. Apply educational principles and methodologies to teaching/learning situations involving students, colleagues, patients, and other members of the health care team.
14. Recognize and respond (when appropriate) to the impact of political, legislative, regulatory, and economic factors on the clinical laboratory science profession.
15. Develop a basic understanding of cultural differences and demonstrate respect for all persons.
16. Interpret quality control results such as Levy-Jennings charts and an understanding of the Westgard Rules.

UB MEDICAL LABORATORY SCIENCE PROGRAM FACULTY

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CLINICAL AFFILIATES*

The UB Medical Laboratory Science Program is affiliated with the following clinical sites:

Yale New Haven Hospital
Waterbury Hospital
St Vincent's Medical Center
Bridgeport Hospital
Greenwich Hospital

*Students are responsible for transportation to the clinical sites.

Clinical Placements:

Students will have the opportunity to indicate their first choice for clinical placement from the above list and must complete a clinical placement application (attached). The clinical site determines the final selection. This may be based on a live or telephone interview, GPA, references, and the submission of an optional student narrative outlining the student's reasons for special consideration at that site. Normally students may apply to locations closer to home. If a student would like to request a clinical site not on the above list, then they can request that option with the program director, who will investigate that possibility.

Students successfully completing the pre-clinical phase of the UB program will be assisted in finding a clinical site. However there is no guarantee that the student will get their first choice. MLS Clinical rotations are normally comprised of two semesters. The clinical sites are determined for each semester. A student may wish to request to extend a clinical site experience to another semester and may request that option before the end of the first clinical rotation or they may request to be placed at another clinical location for the second semester. Clinical sites can also offer to retain the student for a second semester or can request that the student not continue at that site and will need to find another clinical placement. This is an opportunity for the student to demonstrate to a potential employer their capabilities of becoming a future employee. The option to train at two clinical sites also has the added advantage for the student of seeing two different clinical laboratory operations. If the student remains at a single site for the entire clinical experience, it has the advantage to acclimate them further to that site. Students at all clinical sites receive the same clinical training materials, tests and competency checklists. Clinical are held from Tuesday to Thursday with students reporting back to UB for the advanced clinical lectures on Mondays. Fall semester rotations are normally comprised of Clinical Chemistry, Molecular and Hematology/Coagulation and Spring semester rotations are normally Microbiology, Immunology and Immunohematology. The Urinalysis rotation will depend on what department that area is normally performed in. Research activities occur during the Spring semester.

Any other specialized areas (point of care) are scheduled by the individual sites in the appropriate rotation. The second part of the Phlebotomy experience occurs during the second semester.

During clinical, students follow the attendance and holiday policy of the clinical site. If there is inclement weather the student is asked to contact the site to determine suitability to travel.

Contact Information for the Clinical Sites:

Yale New Haven Hospital

Yale New Haven Hospital
20 York Street
New Haven, CT 06510
(203) 688-4242
Clinical Coordinator: Rita Napierkowski Lab Manager Peter Marone

Waterbury Hospital

Waterbury Hospital
64 Robbins St
Waterbury, CT 06708
(203) 573-6000
Clinical Coordinator: Sue O'brien Lab Manager: Anne Lemelin

St Vincent's Medical Center

St Vincent's Medical Center
2800 Main St
Bridgeport, CT 06606
(203) 576-5036
Clinical Coordinator: Susan Ferency Lab Manager: Jean Cayer

Bridgeport Hospital

Bridgeport Hospital
267 Grant St
Bridgeport, CT 06610
(203) 384-3000
Clinical Coordinator: _Mary Damilowski_ Lab Manager: Patti Clark

Greenwich Hospital

Greenwich Hospital
5 Perry Ridge Rd.
Greenwich CT 06830
(203) 863-3000
Clinical Coordinator: Kathleen Mitas, Wendy Calzone

CURRICULUM

Medical Laboratory Science *Bachelor of Science Degree*

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Curriculum and Program

Requirements

A B.S. degree in Medical Laboratory Science provides exciting opportunities for individuals with an interest in science who wish to pursue a career in a health/medical profession or other laboratory-related field. Medical Technologists, also called Clinical Laboratory Scientists and most recently Medical Laboratory Scientists, analyze human blood and other body fluids using a variety of methods and precision instruments. The results of these analyses are used to determine the presence or absence of disease, help determine appropriate treatment, monitor therapy, and assess health. In addition to performance and interpretation of laboratory procedures, clinical laboratory scientists may be involved in the selection of lab methods or analyzers, as well as training, supervision, and consultation with other health care professionals.

The program is currently licensed by the state of CT to offer a program and pending national program accreditation, completion of the degree will lead to eligibility for optional certification by the Board of Registry of the American Society of Clinical Pathology as a Medical Laboratory Scientist.

The granting of the degree/certificate is not contingent on passing any type of external certification or licensure examination.

The UB Medical Laboratory Science program is pursuing formal national accreditation through the National Accrediting Agency for Clinical Laboratory Sciences, 5600 N. River Rd., Suite 720, Rosemont, IL 60018-5119 (773) 714-8880

Entrance Requirements and Advising

Incoming Freshman who have met the following criteria: (a) SAT scores of 530 verbal and 520 math, and 480 writing or composite ACT score of 22; (b) Grade point average of B (3.0) or better; (c) Three years of mathematics and two lab sciences in high school can declare a MLS major at any time during the first two years of study.

The formal medical laboratory science curriculum encompasses the last two years of study. All prospective MLS majors, including transfer students will be evaluated prior to the fall semester of the junior year to determine whether all the necessary pre-requisites have been met or are in progress. To continue into the junior year of the program all MLS majors must complete a minimum 61 semester hours including all UB general education requirements, except Capstone, and all science foundation courses. Students must maintain a minimum GPA of 2.50. MLS majors are required to maintain a grade of C or better in all science foundation courses.

TOEFL scores

Paper-based: 550

Computer-based: 213

Internet-based: 80

We also accept the IELTS (International English Language Testing System) and require an Overall band score of 6.5 and no part score lower than 6.0

Program Requirements and Features

Completion of the Medical Laboratory Science degree requires 28 weeks of supervised clinical work in a hospital laboratory, provided by our clinical affiliates.

Since the curriculum includes laboratory work done under professional supervision, the degree candidate not only must satisfy the customary expectations of academic work but also must meet the high-quality standards demanded of a professional medical laboratory scientist. Students must maintain a minimum GPA of 2.50. MLS students are required to maintain a grade of C or better in all required courses. MLS students must pass a comprehensive pre-clinical examination prior to pursuing their clinical rotations.

Individual professional liability insurance is required of each student and can be purchased through American Society for Clinical Laboratory Science (ASCLS).

Criminal background checks and/or drug screening may be required before clinical rotations. A background check that is not "clear" may preclude rotations at some hospitals and prevents employment at most healthcare facilities.

As a closure requirement for graduation, students must pass a comprehensive department examination covering all aspects of clinical laboratory science. However, issuing of the degree is not contingent on passing any type of external certification or licensure examination.

Pre-Physician Assistant and Health Professional Options

The Medical Laboratory Science Major meets all pre-requisites for UB's Physician Assistant program, including 500 hours of clinical experience. Successful graduates of the Medical Laboratory Science program are also highly competitive for other medical, health, and research oriented graduate programs.

Summary of MLS Requirements

PROGRAM REQUIREMENTS

Medical Laboratory Science Courses

MLSC	301	Phlebotomy/Safety	2
MLSC	310	Intro to Hematology/Hemostasis	2
MLSC	311	Intro to Clinical Chemistry	3
MLSC	314	Intro to Immunohematology	2
MLSC	315	Fundamentals of MLS	3
MLSC	317	Mycology/Parasite/Virology	4
MLSC	320	Preclinical seminar	1
MLSC	321	Clinical Seminar I Education	1
MLSC	322	Clinical Seminar II Management	1
MLSC	332	Medical Bacteriology	4
MLSC	380	Phlebotomy Rotation	1
MLSC	410	Advanced Hematology/Hemostasis	2
MLSC	411	Advanced Clinical Chemistry	2
MLSC	414	Advanced Immunohematology	2
MLSC	420	Clinical Hematology Lab Rotation	4
MLSC	421	Clinical Chemistry Lab Rotation	5
MLSC	422	Clinical Micro Lab Rotation	4
MLSC	424	Clinical Immunohematology Lab Rotation	3
MLSC	431	Clinical Correlations	2
MLSC	441	Immunology	4
			52

Science Foundation Courses

BIOL	102	General Biology II	4
BIOL	211	General Physiology	4
BIOL	320	Microbiology	4
BIOL	380	Molecular Diagnostics	3
BIOL	443	Molecular Biology	3
MATH	203/203B	Biostatistics	4
CHEM	203	Intro Organic Chem	4
CHEM	302	Analytical Methods	4
CHEM	360	Biochemistry	3
CHEM	380	Physiological Chem	3
			40

General Education Requirements

ENGL	101	English Composition	3
FYS	101	First Year Seminar	3
MATH	109	Pre-calculus	4
CHEM	103	General Chemistry I	4
CHEM	104	General Chemistry II	4
PHIL	110	Healthcare Ethics	3
HU		Humanities Core	3
PSYC	380	Biological Psychology	3
SS		Social Science Core	3
FA		Fine Arts Core	3
CAPS	390	Capstone	3

36

Total Semester Hours

124

Plans of Study
Suggested Program

FRESHMAN YEAR

Fall Semester

ENGL 101 English Composition	3
FYS 101 First Year Seminar	3
MATH 109 Precalculus	4
CHEM 103 General Chemistry I	4
BIO102 General Bio 102	4
	18

Spring Semester

Social Science, Humanities, or Fine Arts Core	6
CHEM 104 General Chemistry II	4
BIOL 211 General physiology	4
PHIL 110HU Healthcare Ethics	3
	17

SOPHOMORE YEAR

Fall Semester

PSYC 380SS Biological Psychology	3
MLSC 315 Fundamentals MLS	2
Social Science, Humanities, or Fine Arts Core	3
CHEM 203 Intro Organic Chem	4
MATH 203/203B Biostatistics	4
	16

Spring Semester

CHEM 302 Analytical Methods	4
CHEM 360 Biochemistry	3
MLSC 301 Phlebotomy	2
BIOL 320 Microbiology	4
FA/ HU/ SS elec optional	3
	13/16

JUNIOR YEAR

Fall Semester

Bio 380 Molecular Diagnostics	3
MLSC 441 Immunology	4
MLSC 332 Medical Bacteriology	4
CHEM 380 Physiological Chemistry	3
MLSC 310 Intro to Hematology/Hemostasis	2
	16

Spring Semester

BIOL 443 Molecular Biology	3
MLSC 311 Intro to Clinical Chemistry	3
MLSC 317 Mycology/Parasite/Virology	4
MLSC 320 Pre-clinical Seminar	1
MLSC 314 Intro to Immunohematology	2
CAPS 390 Capstone	3
	16

SENIOR YEAR (Clinicals)

Fall Semester

MLSC 411 Advanced Clinical Chemistry	2
MLSC 410 Advanced Hematology	2
MLSC 321 Clinical Seminar I Education	1
MLSC 420 Clinical Hematology Rotation	4
MLSC 421 Clinical Chemistry Rotation	5
	14

Spring Semester

MLSC 322 Clinical Seminar II Management	1
MLSC 431 Clinical Correlations	2
MLSC 380 Phlebotomy Rotation	1
MLSC 414 Advanced Immunohematology	2
MLSC 432 Clinical Research	1
MLSC 424 Clinical Immunochemo Rotation	3
MLSC 422 Clinical Microbiology Rotation	4

128 Total Credits

Courses of Instruction

Medical Laboratory Science (MLSC)

MLSC 301

Phlebotomy

Introduction to the theory and practice of phlebotomy and laboratory safety. Pre-analytical, analytical and post analytical components of laboratory service. Introduction to the principle and practice of quality assurance and quality improvement.

2 Semester hours

MLSC 310

Intro to Hematology

Lecture/laboratory course that emphasizes basic hematologic principles. Manual and automated procedures are performed. Emphasis on morphology and clinical applications. The course includes hemostasis and components in the blood related to hemostatic mechanisms. Includes principles of procedures involved and their relationship to diagnosis and treatment of disease. Prerequisite: BIOL 102 with a C or better. Recommend MLSC 315 or BIOL 114 as a pre-requisite for Biology majors.

2 semester hours

MLSC 311

Intro to Clinical Chemistry

Lecture/laboratory course focusing on clinical significance and methodology of carbohydrates, proteins, lipids, enzymes, electrolytes, blood gases, acid-base balance, liver function, kidney function, and endocrinology. Emphasis on quality control as it applies to selected clinical chemistry procedures. Review of lab math and statistics. Prerequisite: CHEM 380 with a C or better.

3 semester hours

MLSC 314

Intro to Immunohematology

Lecture/laboratory course emphasizing immunohematologic concepts and properties underlying scientific principles of blood banking. Includes theory and practical applications of blood-group systems, antibody identification and compatibility testing, hemolytic disease of the newborn, autoimmune hemolytic anemia, and donor testing introduction to procurement and processing. Prerequisite: BIOL/MLSC 441 with a C or better.

2 semester hours

MLSC 315

Fundamentals of Medical Laboratory Science

Lecture and laboratory introduction to Medical Lab sciences. Topics to include: Safety, Professionalism, Introduction to all areas of the modern clinical laboratory (Chemistry, Hematology, Microbiology, Immuno/Serology, Blood banking with a special emphasis on Clinical Microscopy and urinalysis.

Pre-requisite: BIOL 102, CHEM 103 with a C or better

2 semester hours

MLSC 317

Mycology/Parasitology/Virology

Overview of medically significant fungi, parasites, and viruses. Emphasis will be placed on pathogenesis, modes of transmission, and identification. Laboratory techniques used in isolation, cultivation, and identification will be used. Also included will be discussions of epidemiology and host response regarding these microorganisms. Prerequisite: BIOL 101 or BIOL 332, both with a C or better.

4 semester hours

MLSC 320

Pre-clinical Seminar

An introduction to the profession of clinical laboratory science., review of ethics and professionalism, confidentiality, health care issues, application of safety and government regulations and standards, customer service, interpersonal and interdisciplinary communication and team building skills, UBMLSC policy manual student handbook review, preparation for clinical interviews, resume writing, laboratory organization, roles, and credentialing of laboratory practitioners are discussed. Standards, ethics, and current professional issues are examined. Communication skill development and review of scientific literature are included. Review for the successful completion of the clinical readiness examination. With permission of the Program Director only.

1 semester hour

MLSC 321

Clinical Seminar I

Educational methodology, including objective and examination, writing and item analysis curriculum design and evaluation of Cognitive, affective and psychomotor domains. Accreditation, Certification and licensure related issues. Dynamics of the health care delivery system as it relates to the clinical laboratory and services. Prerequisite: MLSC 320.

1 semester hour

MLSC 322

Clinical Seminar II

Introduction to human resource and financial management, Lab operations including critical pathways and clinical decision making, performance improvement, lab information systems LIS, personnel management and financial management of a clinical laboratory. Advanced principles and practices of quality assurance and quality improvement, career advancement and planning, professionalism, CMP. Prerequisite: MLSC 322.

1 semester hour

MLSC 332

Medical Microbiology

This course is taught in conjunction with the Bio332 Medical microbiology course, the laboratory section is open to MLS majors and focuses on techniques used for the identification of microorganisms in a clinical laboratory. Pre-requisite: Bio 320 with a C or better.

4 semester hours

MLSC 380

Phlebotomy Internship

Performance and observation of various phlebotomy techniques in potentially both inpatient and outpatient settings. Prerequisite: MLSC 301 with a C or better.

2 semester hours

MLSC 410

Advanced Hematology/ Hemostasis

Lecture/laboratory focusing on advanced principles of hematologic testing leading to improved interpretative skills in hematology. Emphasis on correlation of data with disease states and disorders. Case studies and discussion used to illustrate the pathophysiology of hematological dysfunction. Prerequisite: MLSC 310 with a C or better.

2 semester hours

MLSC 411

Advanced Clinical Chemistry

Lecture/laboratory focusing on clinical significance and methodology of trace elements, vitamins, therapeutic drug monitoring, and toxicology. Newer testing methods used to identify diseases/disorders will be discussed. Emphasizes instrument selection and method validation process. Prerequisite: MLSC 311 with a C or better.

2 semester hours

MLSC 414

Advanced Immunohematology

Lecture/laboratory focusing on problem-solving and special techniques used in antibody identification and compatibility testing. Also includes a discussion of donor requirements, blood component preparation and therapy, and quality assurance in the blood bank/transfusion service. Prerequisite: MLSC 314 with a C or better.

2 semester hours

MLSC 420

Clinical Hematology Laboratory Rotation (Clinical site)

Automated and manual methods of cell counting and differentiation are performed on blood and other body fluids. Instruction and experience in advanced instrumentation using automated cell counters and differential systems, coagulation and platelet analyzers, and special hematologic testing of white and red cells using cytochemistry techniques are provided to identify disease states and disorders. Prerequisite: MLSC 410 with C or better and successful completion of the clinical readiness examination.

4 semester hours

MLSC 421

Clinical Chemistry Laboratory Rotation (Clinical)

Provides an opportunity to apply chemical and immunologic theory and practice to routine and special clinical chemistry procedures, toxicology, therapeutic drug monitoring, and urinalysis. Also includes immunologic procedures. Includes instruction and experience in the use, standardization, and maintenance of sophisticated laboratory analyzers. Prerequisite: MLSC 411 with a C or better and successful completion of the clinical readiness examination.

5 semester hours

MLSC 422

Clinical Microbiology Laboratory Rotation (Clinical)

Isolation and identification of clinically important bacteria, mycobacteria, and fungi including antibiotic susceptibility testing. Techniques for identifying parasites are included. Prerequisite: MLSC 332 with a C or better and successful completion of the clinical readiness examination.

4 semester hours

MLSC 424

Clinical Immunohematology Laboratory Rotation (Clinical)

Blood typing, antibody screening and identification, compatibility testing, and other immunohematologic procedures are included. Emphasis is on operation and problem-solving in a modern transfusion service. Prerequisite: MLSC 414 with a C or better and successful completion of the clinical readiness examination.

3 semester hours

MLSC 431

Clinical Correlation (Clinical)

Use of problem-based case studies to analyze clinical situations and correlate laboratory data. Prerequisite: Successful completion of the clinical readiness examination.

2 semester hours

MLSC 432

Clinical research

A review of qualitative and quantitative research methods and statistics resulting in the completion of a clinical based technical or educational based research project. Prerequisite MATH 203B.

1 semester hour

MLSC 441

Immunology

Consideration of the basic principles and concepts of the mechanics of immunity and the relation of immunological phenomena to biological problems. The laboratory section is devoted to immunologic and serologic techniques utilized in a clinical laboratory. Prerequisite: Bio 211 with a C or better.

4 Semester hours

Honors in Medical Laboratory Science

UB MLS majors with a GPA equal to or greater than 3.25 and who have completed the first semester of the pre-clinical curriculum may elect to participate in the MLS honors option.

In addition to the MLS program requirements, honors students must:

- Maintain a minimum GPA of 3.25,
- Earn a minimum of a B grade each course in the Medical Laboratory Science requirements,
- Successfully complete three credits of Bio 399 Independent Research,
- Present their findings in a formal paper and public presentation.

Students must apply for participation in the honors program to the program director and obtain approval of their faculty research advisor before beginning the pre-clinical courses. For further information, see the program director or education coordinator.

Professional Attitude and Behavior

An important aspect of professional development is the development of certain attitudes and behaviors that are considered necessary and appropriate for the efficient, competent and quality performance of duties in the workplace. Following is a list of objectives for professional development for medical laboratory science students. MLS students will be evaluated based on these affective objectives in each clinical rotation.

GENERAL AFFECTIVE OBJECTIVES

1. Makes decisions demonstrating sound **JUDGMENT AND COMMON SENSE** to:
 - a. organize and prioritize work and assignments
 - b. draw sound conclusions
 - c. recognize and acknowledge personal limitations of knowledge and skills and seek help when appropriate
 - d. recognize strengths and demonstrate self confidence
2. Demonstrates **NEATNESS AND ORDERLINESS** to maintain:
 - a. chemical and biological safety
 - b. neat and organized work area
 - c. restocked reagents and supplies
 - d. neat, legible, accurate reports
3. Is **PREPARED** for the days activities:
 - a. completes work and assignments within the prescribed time
 - b. follows the assigned schedule without prompting
 - c. provides correct answers to oral questions
4. Demonstrates appropriate **INTERACTIONS WITH OTHERS** including:
 - a. works as a team member (focusing on assigned tasks, helping others as time permits or workload changes, cooperates in a team despite personal differences)
 - b. demonstrates self control, tact, respect for self and others
 - c. communicates effectively with others to gather/share information
 - d. respects and complies with authority
 - e. offers sound suggestions for improvement instead of complaining
5. Demonstrates **PROFESSIONAL MATURITY**. Displays stability, adaptability, maintains self confidence in dealing with changing situations:
 - a. adjusts to changing workflow and staffing (STAT situations, personnel shortage, multiple tasks) in a clear headed manner
 - b. maintains self control/ composure in stressful situations
 - c. acts as a peer role model
6. Is **DEPENDABLE AND RESPONSIBLE**:
 - a. complies with attendance and punctuality policies (including breaks and lunches)
 - b. requests approval for planned absence/tardiness in advance, except in emergency
 - c. notifies the instructor when leaving the assigned area
 - d. requests permission before leaving early
 - e. reports/assignments are neat, complete, on time
 - f. quality of work is consistent and shows improvement
 - g. recognizes tasks that need to be done, and completes them satisfactorily
 - h. clearly documents reports with date, time, name/initials
 - i. recognizes and acknowledges errors, notifies instructor/supervisor, takes appropriate corrective action
7. Demonstrates **ABILITY AND WILLINGNESS TO RESPOND TO PROFESSIONAL DIRECTION**:
 - a. seeks, accepts and applies suggestions for improvement of technical and professional skills
 - b. follows instructions
 - c. accepts constructive direction/criticism
 - d. improves performance by implementing suggested behavioral changes
8. **INITIATES** learning experiences to improve knowledge, skills and ability:
 - a. begins daily work without prodding
 - b. pursues additional educational experiences and resources
 - c. uses free time productively/effectively
9. **PERSEVERES** in completing assignments and solving problems:

- a. solves problems independently
- b. uses and develops knowledge and skills to accomplish tasks
- c. makes effort to overcome initial failures and resolve problems
- d. defines problems and suggests corrective action

10. **PARTICIPATES** in all learning activities:

- a. supports team efforts
- b. is attentive/maintains focus
- c. contributes to discussions

MLS PROGRAM AFFECTIVE EVALUATION

This evaluation form has been developed on the basis of a behavioral based rating scale. Descriptions for each category have been delineated. These descriptions are **not** intended to be all encompassing, but should be used as objective guidelines for the evaluation of the Affective Domain. The intent of this form is to use observable behaviors as the criteria for evaluation. The comment section can be used to elaborate on any item that needs further explanation.

1. JUDGMENT AND COMMON SENSE

Consider the amount of supervision or coaching the student needs in relation to the student's ability to:

- organize assignments in an efficient manner
- make logical decisions or derive solutions
- know his/her own limitations and seek help at appropriate times

Score

- 1 = Student often does not recognize problems and/or chooses not to seek help when it is indicated. Student requires considerable supervision to organize assigned tasks, solve problems, and come to sound conclusions.
- 2 = Student is inconsistent in ability to recognize problems and seek help at appropriate times. Student requires more than an average amount of supervision to organize tasks, solve problems, and come to sound conclusions.
- 3 = Student recognizes some problems and seeks help at appropriate times. Student requires an average amount of help organizing tasks, making decisions and coming to conclusions.
- 4 = Student recognizes most problems and seeks help at appropriate times. Student requires less than average amount of help to organize tasks and draws sound conclusions.
- 5 = Student recognizes problems and seeks help when appropriate. Student requires little supervision to organize tasks and draws sound conclusions.

2. NEATNESS AND ORDERLINESS

Consider the student's ability to maintain:

- a neat, organized work area in allotted space
- a clean work area, which includes bench tops and equipment
- proper storage of reagents
- proper restocking of work area

Score

- 1 = Student's work area is chaotic and overflows into other work spaces. Work area is not kept neat and clean, reagents are not properly stored and area is not restocked. Student frequently leaves a cluttered work space behind.
- 2 = Student's work area is often chaotic and overflows into other work spaces. Work area may or may not be cleaned; reagents may or may not be properly stored and restocked. Student may or may not leave a cluttered work space.

- 3 = Student's work area occasionally appears disorganized but does not overflow into other work areas. Student usually cleans area, restocking reagents as necessary and storing reagents properly.
- 4 = Student's work area is usually organized, and does not overflow into other work areas. Student cleans, restocks and restores area before leaving.
- 5 = Student's work area is consistently organized, neat, and clean. Student cleans, restocks, and restores area before leaving.

3. PREPAREDNESS

Consider if the student has read through procedures, lectures, or check lists to prepare for quizzes, laboratories, and other assignments.

Score

- 1 = Student does not prepare for quizzes, laboratories and other assignments. Student needs extra time and help to take quizzes and complete procedures.
- 2 = Student may or may not prepare for quizzes, laboratories and other assignments and may need extra time and help.
- 3 = Student is usually prepared for quizzes, laboratories and other assignments. Usually need minimal extra time or help.
- 4 = Student is prepared for quizzes, laboratories and other assignments. Begins and completes tasks with minimal help.
- 5 = Student is fully prepared for quizzes, laboratories and other assignments and rarely needs help completing tasks.

4. INTERACTION WITH OTHERS

Emphasis should be placed on the student's efforts to interact with others, including cooperation, tact, tolerance, self-control, politeness, respect, and teamwork.

Score

- 1 = Does not work well with others, uncooperative, unfriendly, rude, or intolerant. Often finds excuses not to help or interact with others.
- 2 = Minimally tolerant of others. Reluctant to volunteer to help others when necessary.
- 3 = Maintains effective working relationships with others. Usually helps others when necessary.
- 4 = Maintains effective working relationships with others. Consistently volunteers to help others when necessary.
- 5 = Extremely effective in dealing with various people. Consistently volunteers to help others whenever possible.

5. PROFESSIONAL MATURITY

Consider the student's ability to adapt to change or stressful situations in a clear headed manner.

Score

- 1 = Lacks self-control in stressful situations. Has a negative influence on others.
- 2 = Lacks consistency in handling stress. Outbursts of emotion seem to accompany periods of high demand or stress. Negatively affects others.

- 3 = Handles stress with a limited amount of excitement. Continues to function on task without influencing others.
- 4 = Calm under stress. Continues to work efficiently.
- 5 = A leader in stressful situations. Exerts a calming influence on others and functions efficiently to solve the task at hand.

6. DEPENDABILITY AND RESPONSIBILITY TOWARDS WORK.

Consider the student's overall quality of work including:

- neatness and completeness of assignments/procedures
- ability to meet deadlines
- consistency of performance
- overall effort

Score

- 1 = Procedure usually requires repeating. Assignments often are late, incomplete, unclear, or indicate a lack of effort
- 2 = Lacks consistency in performance. Sporadically shows effort and quality in his/her work.
- 3 = Maintains a consistent level of quality in assignments, usually clear, complete and on time.
- 4 = Maintains a consistent level of quality in his/her work, may occasionally be outstanding. Work is on time and complete.
- 5 = Consistently produces high quality work in less than expected time. Rarely needs to repeat procedures.

7. ABILITY AND WILLINGNESS TO RESPOND TO PROFESSIONAL DIRECTION

Consider the student's willingness to follow instructions and accept professional and constructive direction and apply it to improve job performance.

Score

- 1 = Does not accept constructive or professional direction, refuses to modify behavior to improve performance.
- 2 = Usually accepts constructive and professional direction but does not consistently apply it to improve performance.
- 3 = Usually accepts constructive and professional direction and applies it to improve performance.
- 4 = Accepts constructive and professional direction and applies it to improve performance.
- 5 = Seeks constructive and professional direction to improve performance.

8. INITIATIVE

Consider the student's interest in improving knowledge and ability and willingness to seek out additional educational experiences.

Score

- 1 = Shows no initiative. Does not seek out additional information. Unwilling to take on additional educational opportunities.
- 2 = Shows little initiative. Does not usually seek out additional information. Reluctantly takes on additional educational opportunities.

- 3 = Usually shows initiative and seeks out information to improve his/her knowledge and ability. Is willing to take on additional educational opportunities when made aware of them.
- 4 = Shows initiative and seeks out information to improve his/her knowledge and ability. Requests additional educational opportunities and approaches them with enthusiasm.
- 5 = Shows outstanding initiative; actively seeks to improve knowledge and skills. Will independently take on additional educational opportunities and tackle them with enthusiasm.

9. PERSEVERANCE

Evaluate willingness to try and to persist in the accomplishment of assigned tasks.

Score

- 1 = If a procedure does not work the first time, student becomes discouraged, does not ask for help, and when advice is given is often unwilling to try again. Must continually be prodded.
- 2 = If a procedure does not work at first, student is content to wait for help to be offered before trying again. Is easily discouraged. Needs prodding.
- 3 = If a procedure fails, is usually willing to try again without prodding. Usually asks for advice to solve problems, seldom uses his/her own resources.
- 4 = If a procedure does not work, consistently will keep trying. Occasionally asks for help in solving problems but first tries to use his/her own resources.
- 5 = If a procedure does not work will persist in completing it. Utilizes knowledge gained from unsuccessful attempts along with his/her own resources to accomplish task. Rarely needs additional help to resolve problems.

10. PARTICIPATION

Evaluate the student's input in cognitive and/or psychomotor experiences in lecture and laboratory.

Score

- 1 = Does not maintain attention to subject at hand. Provides no input to classroom, laboratory or clinical setting.
- 2 = Appears distracted or disinterested. Rarely provides positive input.
- 3 = Usually attentive. Occasionally asks questions, answers when called upon.
- 4 = Attentive. Frequently asks questions and volunteers answers. Provides positive input.
- 5 = Attentive and focused. Frequently volunteers additional information and asks thought provoking questions.

**UB MLS Program
STUDENT AFFECTIVE EVALUATION FOR CLINICAL COURSES**

Student _____ Course _____ Program/Year _____

Refer to the general Affective Objectives (see reverse side) and the Student Affective Evaluation for additional descriptors, language and expectations for **entry level** students. Check the box(es) that indicate performance level for each specific behavior.

Performance Level	Poor Average Outstanding					N/A	Comments
	1	2	3	4	5		
1. Judgment / Common Sense							
2. Neatness / Orderliness							
3. Preparation							
4. Interactions with Others							
5. Professional Maturity							
6. Dependability / Responsibility							
7. Response to Professional Direction							
8. Initiative							
9. Perseverance							
10. Participation							

Technical observations/comments:

Instructor's signature _____

Date _____

Student's signature _____

Date _____

Student _____ **Course** _____ **Program/Year** _____

Please evaluate student performance in the following areas: Anything with a No should have documentation to support it.

Number of days in rotation _____:

Number of absences: _____

Number of tardy days: _____

Professional Ethics - Student demonstrated a respect for confidentiality of patient records and reports and has not discussed this information in public areas or with inappropriate persons.

_____ Yes _____ No

Integrity - Student conformed to the Hospital/Program standards for honesty and integrity in all situations (patient reports, tests, practical examinations, assignments).

_____ Yes _____ No

Safety - Student adhered to the Hospital safety procedures and practices.

_____ Yes _____ No

Dress Code - Student conformed to the dress code in the Student Handbook.

_____ Yes _____ No

Equipment Maintenance-Student used/maintained equipment according to established protocol.

_____ Yes _____ No

University of Bridgeport
STUDENT AFFECTIVE MLSC COURSE EVALUATION
Confidential Report

PROGRAM: MLS

STUDENT: _____

YEAR: _____

SUBJECT: _____

Attendance:

Grade Summary:

1. Length of course: _____ days Cognitive: _____

2. Number of absences: _____ days Affective: _____

3. Tardiness _____ incidents Psychomotor: _____

4. Dress code _____ incidents Grade: _____

Letter Grade: _____

Please summarize the student's overall performance below. Use the terminology and format of the evaluation form as a guide to specify the **STRENGTHS**, **WEAKNESSES**, and **SUGGESTIONS FOR IMPROVEMENT**.

Professional Attitudes and Affective Behavior Evaluation Form Rubric

Instructions to evaluators:

1. Please objectively judge the observed qualities of the student, making an accurate description of the person rated while rotating in the particular department mentioned above, during the dates indicated.

2. Please rate the student on the qualities expressed in each statement, based on the following numerical scale:

Grade Conversion Chart:

- Affective Evaluation Score to Numerical Grade

- Numerical Grade to Letter Grade

Average Affective Score	Numerical Grade Conversion	Letter Grade	Average Affective Score	Numerical Grade Conversion	Letter Grade
5.0	100		2.9	79	
4.9	99		2.8	78	C+
4.8	98		2.7	77	
4.7	97	A	2.6	76	
4.6	96		2.5	75	C
4.5	95		2.4*	74	Minimum Affective passing
4.4	94		2.3	73	Minimum passing grade
4.3	93		2.2	72	
4.2	92		2.1	71	C-
4.1	91	A-	2.0	70	
4	90		1.9	69	
3.9	89		1.8	68	D+
3.8	88	B+	1.7	67	
3.7	87		1.6	66	
3.6	86		1.5	65	
3.5	85		1.4	64	D
3.4	84	B	1.3	63	
3.3	83		1.2	62	
3.2	82		1.1	61	D-
3.1	81	B-	1	60	
3	80			<60	F

3. When you have completed the evaluation, sign it, go over it with the student, and obtain the student's signature.

The average of these evaluations will count 20% of the average of the department grade in each rotation. Satisfactory ratings must be maintained. Satisfactory is defined as 73%.

Please comment to clarify or enlarge upon any of the items listed. An explanation MUST follow a rating of "2" or below. Use item number to identify comment.

ACADEMIC STANDARDS POLICY

Medical Laboratory Science students are required to maintain a grade of C or better in all Science Foundation and Medical Laboratory Science courses. If a student receives a grade lower than a C, she/he must petition the Program Committee for permission to repeat the course. The repeat should occur at the next time the course is regularly scheduled; or, for a clinical course, at a time mutually acceptable to the clinical affiliate and the Program Committee.

If a student fails to receive a C or better in any two required courses, or receives a grade lower than a C in any required course two times, she/he will be removed from the Program and not be allowed to register for the clinical rotations.

MLS students must pass a comprehensive pre-clinical examination prior to pursuing their clinical rotations. Please note: The comprehensive pre-clinical exam will evaluate written and oral English proficiency in addition to the students' understanding of the pre-clinical course material.

Students who do not pass the exam will not be allowed to register for the clinical rotations. If a student does not pass the pre-clinical examination, she/he must petition the Program Committee for permission to repeat the exam.

MLS students must maintain a GPA of 2.5 or higher. If a student's GPA falls below 2.5, they will not be allowed to register for the clinical rotations.

Grading policies are established as an objective measure of student competency.

1. Grading Scale

The following scale shows the range of numeric grade averages and their equivalent letter grade.

92.5-100	A
89.5-92.4	A-
86.5-89.4	B+
82.5-86.4	B
79.5-82.4	B-
76.5-79.4	C+
72.5-76.4	C
<72.5	Course Failure

For grades <72.5, see
"Individual Domains" for details

Incomplete Assignments

If a student fails to complete all of the assignments for a course, the instructor may: a) give a grade of "0" for all incomplete material and calculate the course grade or b) consider the course incomplete. A course will be considered **INCOMPLETE** until **ALL**

assignments are completed; materials are handed in, and approved by the instructor. A final grade cannot be calculated for an incomplete course.

MLSC courses in clinical will have the following % weights for grading. All other courses will defer to the course syllabus.

COGNITIVE (40% of final grade)

Written or computerized tests, checklists, worksheets, case studies, presentations, and/or reports will be used to assess the student's knowledge of the subject area.

A **final comprehensive exam** that is assigned to the cognitive grade is given for each Student Laboratory course. The percentage weight may vary from course to course and is stipulated in the course syllabus.

PSYCHOMOTOR (40% final grade)

The student's technical skills will be judged by performance on a combination of

- practical exercises and exams
- image exams
- completion of procedures
- checklists, worksheets, or other assignments.

Since the nature of the work during clinical rotations is a real reflection of the student's ability to meet requirements of working situations, this is a critical grade.

Weighting of any final comprehensive practical exam is at the discretion of the instructor.

AFFECTIVE (20% of final grade)

Supervisors, instructors, staff, and students have identified objectives for professional affective behaviors by students. Student's attitude and behavior are evaluated using a **behavior-based rating scale**, the Affective Evaluation form (see attachment 13).

- Behaviors are rated on a scale of 1 to 5 in 10 categories.
- Points are awarded for desirable behaviors.
- **Scores of 1 or 2 in any category are awarded "0" points toward the affective grade.**

****Note:** Instructors may use their discretion when assigning percentages to each domain (Cognitive, Psychomotor, Affective). Affective evaluations are usually conducted on MLSC based courses.

NONACADEMIC STANDARDS POLICY

Infractions of UB rules, regulation, policies, or other disruptive or illegal behavior will result in counseling with the appropriate faculty or administration and may result in sanctions as covered in the Key to UB Student Handbook.

<http://www.bridgeport.edu/Media/Website%20Resources/documents/life/KeytoUB2010.pdf>

While at the clinical sites students are required to follow the rules and regulations of the clinical affiliate. These policies and rules will be provided during an orientation to the clinical site.

The following Unsatisfactory Performance form will be used to document any infractions.

University of Bridgeport
UNSATISFACTORY MLS PERFORMANCE REPORT

Student: _____ Date: _____

Instructor: _____ Program/Course: _____

Performance Area: (check all that apply)

____ Cognitive

____ Failing score
____ Failing average

____ Affective

____ Failing average
____ Attendance
____ Tardiness
____ Absenteeism
____ Absent without call

____ Psychomotor

____ Failing score
____ Failing practical
____ Failing average

____ Dress Code violation

Documentation of:

____ Verbal counseling
____ Written warning
____ Final written warning

Instructor Summary/Comments/Recommendations:

Instructor: _____ Date: _____

Student Corrective Action:

Student: _____ Date: _____

Effectiveness of corrective action to be assessed on: _____

**Failure to correct problem will result
in:** _____

Program Director: _____ *Date:* _____

Witness: _____ *Date:* _____

DRESS CODE POLICY

I. General Appearance

Students in the UB Medical Laboratory Science Programs are expected to follow in MLSC courses a dress code standard similar to the standard established by the clinical laboratory. The dress code and other standards are designed to create and maintain the safety and professional image of health care providers, in general, and laboratory workers, in particular. Each of us contributes to our professional commitment by our own personal behavior; each of us is a role model for others.

The patient is the central focus at a clinical institution. Patients, visitors, and other health care professionals develop perceptions of Medical Laboratory Scientists based on their encounters with laboratory personnel and they often relate appearance with professional capability.

Studies show that impressions are frequently made in the first sixty seconds of an encounter, even before a word is spoken, through physical appearance, body language, and personal etiquette. These are powerful non-verbal communication tools that quickly convey a definite message to others. An appropriate personal image strengthens professional potential and inspires confidence.

In support of this concept, the UB MLS Program has developed these policies to assure that students present a professional appearance, appropriate to a health care service setting, while maintaining safety, comfort and individuality of the employee. When it comes to dress, common sense is the key. Please keep in mind that what is fashionable or appropriate in other settings may not be suitable for working hours in a hospital. A neat, modest, conservative appearance is essential to maintain professional standards.

Enforcement of the dress code will be the responsibility of the Program Director, Education Coordinator and Clinical Laboratory supervisors, managers and clinical instructors.

In the clinical settings identification badges must be worn at all times. Failure to wear the ID badge may result in denied access to certain areas and/or you may be instructed to return home.

II. Dress Code Standards

Proper attire for all MLSC designated courses will include:

1. A clean white long sleeve full-length fluid resistant laboratory coat (provided) with a closed front must be worn in the laboratory area and during phlebotomy rounds. These lab coats are laundered in-house. OSHA forbids taking the coats home for laundering. You must return the lab coats to the hospital laundry at the end of the program.
2. The UB MLS uniform is matching scrub sets in purple eggplant color.
 - A. Pants must be ankle length and should not touch the floor.
 - B. Short sleeve or long sleeve white or black tee shirts may be worn under the scrub top.
3. Comfortable and/or professional athletic style shoes must be conservative in style and neutral in color. They must be closed-toe and closed heel. Heels and/or soles should be less than two inches high. Leather or synthetic, fluid-impermeable material is recommended. Unacceptable footwear includes: crocs (or similar), open-toed shoes, sandals, beach wear, canvas shoes, platform shoes, high-heeled shoes and wooden clogs.
4. During winter months, a white or black turtleneck may be worn under the scrub top or a white or black sweater or sweatshirt may be worn over the scrub top.
5. When authorized by the faculty, students may wear business casual clothing. Legs and feet must be covered. Conservative socks or stockings must be worn.
6. No denim attire of any kind is allowed.

III. Grooming

1. Hair must be clean, neat and well groomed. If hair is long, it must be tied back off the face.
2. Males: Faces must be freshly shaven, or a beard and/or mustache must be clean, neat, trimmed and well groomed.
3. Cosmetics and jewelry may be worn in moderation. During clinical rotations, no more than three earrings per ear are permitted. No jewelry may be worn in other visible pierced body sites (e.g. tongue, eyebrow, etc.).

4. Natural Fingernails (those growing from the individual) must be clean well groomed and not excessively long. During phlebotomy rotation fingernails should not exceed $\frac{1}{4}$ inch above the tip of the finger. Artificial nails including (but not restricted to) bonding, tips, wrappings, tapes, and nail jewelry are NOT acceptable. Nail polish of any color is acceptable as long as it is freshly applied and not chipped or cracked. Fingernail jewelry is not permitted.

IV. Specific Restrictions

1. Clothing

- a) Torn, faded, wrinkled, or tight clothing of any type is unacceptable. Lab coats may **not** be worn to cover inappropriate clothing.
- b) Undergarments or lingerie must not be visible through the uniform.
- c) Clothing must fit in a proper manner so as not to expose a person's belly/breasts/back/buttocks, even in a kneeling or bending position.
- d) High top athletic shoes, hiking or work boots are not acceptable.
- e) No hats or caps of any type may be worn, except for religious or medical reasons.

2. Long or dangling jewelry must not be worn for safety reasons.

V. Enforcement of the Dress Code

Students are expected to **conform to the Dress Code** and maintain a professional appearance **at all times**. Failure to conform to the dress code will be considered an infraction and as a result the student will be instructed to return home to change into appropriate attire (at the discretion of the instructor or supervisor).

- A verbal warning will be issued to the student with documentation on the "Unsatisfactory Performance Report Form"
- A second infraction of the dress code policy will result in a written warning.
- A third infraction will result in a final written warning.
- The fourth infraction to the dress code policy will result in dismissal from the program.

STUDENT HEALTH POLICY *and* ESSENTIAL REQUIREMENTS

Students entering the Medical Laboratory Science Program must be able to meet the physical, mental, and psychological demands of the Program and subsequently the practice of clinical laboratory science. The following list is to be used by potential students, counselors, or physicians to determine if an individual can perform these functions.

Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodation must notify the MLS Program Director prior to beginning the program.

Essential Requirements of the University Of Bridgeport Medical Laboratory Science Program

The National Accrediting Agency for Clinical Laboratory Sciences requires the Medical Laboratory Science Program to publish the essential functions of the program. This information is to be used to become aware and informed of the skills required in the performance of the duties of a Medical Laboratory Scientist and to assess your ability to complete such duties. These essential requirements reflect performance abilities and characteristics that are necessary to successfully complete the requirements of the Medical Laboratory Science Program at the University . These standards are not conditions of admission to the program. Persons interested in applying for admission to the program should review this form to develop a better understanding of the physical abilities and behavioral characteristics necessary to successfully complete the program.

Attached are the essential observational, movement, communication, cognitive, and behavioral requirements for Medical Laboratory Science students. If there are changes in the essential requirements, these changes will be published and students will have the opportunity to discuss any changes with the Program Director and instructors in the Medical Laboratory Science Program.

The UB comply with the requirements and spirit of Section 504 of the Rehabilitation Act and the Americans with Disabilities Act of 1990. The University will consider requests that an individual with a disability, who is otherwise qualified, be afforded reasonable accommodation in fulfilling the essential requirements of the Medical Laboratory Science. To accommodate individuals with disabilities, the Schools will endeavor to make reasonable accommodation to their students that will not impose an undue burden on the program or fundamentally alter its educational requirements and standards.

Please sign below to indicate that you have read and understood the Medical Laboratory Science Program's essential requirements and that you believe that you can successfully complete the program. If you believe that you will need any accommodations to meet specific requirements, please indicate this and follow the procedure for requesting accommodations.

My signature below indicates that I have read and understood the Medical Laboratory Science Program's essential requirements and I believe that I possess the abilities to successfully complete the program.

Name

Date

My signature below indicates that I have read and understood the Medical Laboratory Science Program's essential requirements and I believe that I possess the abilities to successfully complete the program with reasonable accommodations. *

Name

Date

* In order to request accommodations, contact the Program Director.

Essential Requirements for the Medical Laboratory Science Program

Section 1. Essential Observational Requirements for the Medical Laboratory Science Program

The Medical Laboratory Science student must be able to:

- ◆ observe laboratory demonstrations in which biologicals (e.g. body fluids, culture materials, tissue sections, and cellular specimens) are tested for their biochemical, hematological, immunological, microbiological, and histochemical components.
- ◆ describe the color, odor, clarity, and viscosity of biologicals, reagents, or chemical reaction products verbally and in writing.
- ◆ use a clinical grade binocular microscope to discriminate among fine structural and color (hue, shading, and intensity) differences of microscopic specimens.
- ◆ comprehend text, numbers, and graphs displayed in print and on a video monitor or screen.

Section 2. Essential Movement Requirements for the Medical Laboratory Science Program

The Medical Laboratory Science student must be able to:

- ◆ be at different sites and specific laboratory areas, at a designated time, for educational experiences.
- ◆ move safely around a laboratory.
- ◆ reach laboratory benchtops and shelves, patients lying in hospital beds or patients seated in specimen collection chairs.
- ◆ perform moderately taxing continuous physical work, often prolonged standing, over several hours.
- ◆ maneuver equipment to collect blood and other laboratory specimens from patients safely.
- ◆ use and safely control laboratory equipment (e.g. pipettes, test tubes, inoculating loops) and adjust instruments to perform laboratory procedures.
- ◆ use electronic devices to operate laboratory instruments and to calculate, record, evaluate, and transmit laboratory information.

Section 3. Essential Communication Requirements for the Medical Laboratory Science Program

The Medical Laboratory Science student must be able to

- ◆ comprehend technical and professional materials (e.g. textbooks, journal articles, handbooks, procedure and instruction manuals).
- ◆ comprehend verbal communications, including lectures, discussions, and conversations with health care professionals and patients.
- ◆ follow verbal and written instructions in order to correctly and independently perform laboratory test procedures.
- ◆ clearly instruct patients prior to specimen collection.
- ◆ effectively, confidentially, and with sensitivity communicate with patients.
- ◆ communicate with faculty members, fellow students, staff, and other health care professionals in person and in recorded format (writing, typing, graphics, or telecommunication).
- ◆ independently prepare papers and laboratory reports and independently take examinations (written, computer, and laboratory practical exams) to demonstrate content mastery.

Section 4. Essential Cognitive Requirements for the Medical Laboratory Science Program

The Medical Laboratory Science student must be able to

- ◆ independently possess and demonstrate the following cognitive and problem-solving skills: comprehension, measurement, mathematical calculation, reasoning, integration, analysis, self-expression, and compassion.
- ◆ be able to detect and correct performance deviations in laboratory tests.

Section 5. Essential Behavioral Requirements for the Medical Laboratory Science Program

The Medical Laboratory Science student must be able to

- ◆ manage the use of time and organize work in order to complete multiple tasks and responsibilities within realistic constraints.
- ◆ independently exercise appropriate judgment and apply cognitive skills in the classroom, laboratory, and health care settings.
- ◆ provide professional and technical services while experiencing the stresses of task-related uncertainty (e.g. ambiguous test ordering, ambivalent test interpretation), emergent demands ("stat" test orders), and a distracting environment (e.g. high noise levels, crowding, complex visual stimuli).
- ◆ be flexible and creative and adapt to professional and technical changes.
- ◆ recognize potentially hazardous materials, equipment, and situations and work safely in order to minimize risk of injury to patients, self and nearby individuals.
- ◆ adapt to working with biological substances (e.g. urine, blood, feces).
- ◆ foster a team approach by supporting and promoting the activities of fellow students and health care professionals in learning, task completion, problem solving, and patient care.
- ◆ admit when an error has been made, when uncertain about an analytical result, or when unsure about the appropriate response in professional situations.
- ◆ critically evaluate his or her own performance, accept constructive criticism, and seek ways for improvement (e.g. participate in enriching educational activities).
- ◆ evaluate the performance of fellow students, faculty, clinical instructors, and the program and tactfully offer constructive criticism.

IMMUNIZATION POLICY

Prior to entering the Program, students **must** provide evidence that they have received appropriate immunizations as required by the State of Connecticut. In addition, entering students must show evidence that they have received the Hepatitis B Vaccine or sign a release of liability wavier form. They must also have the 2-stage T.B. test series prior to entering clinical courses. Each student will be assessed a fee for group health and accident insurance unless the student shows proof of equivalent coverage.

HEALTH CARE ACCESS

Services available through the Health Services department are listed on their website. Additionally, Health Sciences clinics are available to students. These include Naturopathic, Chiropractic, Acupuncture and Dental Hygiene services.

Emergency medical care is made available to students while they are in attendance at UB via a UB health clinic. During office hours, Health Services is open and provides urgent care for students. After office hours, security will assist with calling an ambulance for students or sending them to the Emergency room by cab. Emergency medical care can be provided for students through two local hospitals: St. Vincent's Hospital and Bridgeport Hospital. During clinical rotations students have access to their clinical site emergency departments.

LIABILTY INSURANCE REQUIREMENT

In addition to health insurance, the clinical sites may require that each student has current professional **liability** insurance. This may be obtained for a reasonable cost through ASCLS (American Society for Clinical Laboratory Science). <http://www.ascls.org>

STUDENT GUIDANCE

UB provides academic advisors for issues regarding lower division courses and transfer requirements. Medical Laboratory Science faculty are available for advising on academic, professional, career, or personal issues.

For additional academic support, students are encouraged to visit the Academic Resource Center. <http://www.bridgeport.edu/academics/ubsupportservices/arc.aspx>

UB also has a Health Center (<http://www.uis.edu/healthservices/>) to help individuals to perform optimally, both physically and mentally. Students are also encouraged to use UB Health Services for professional counseling. <http://www.bridgeport.edu/academics/graduate/pa/healthservices>

There is also a Financial Assistance Office where student may receive information about grants, loans, and work study opportunities. <http://www.bridgeport.edu/admissions/undergraduate/tuitionandfinaid/finaidresourcesforms>

Both the MLS Program and UB are committed to confidentiality of formal and informal information shared by students.

PLAGIARISM POLICY

Plagiarism will not be condoned in any form. Plagiarism is copying the work of another but allowing the reader to think that the work is yours. Examples include copying another student's paper, buying a paper on-line, and relying upon and citing a source identified in another source which you have not actually read yourself. It includes both paraphrasing the thoughts and words of others and taking quotes from others without attributing them to the actual source. Any instance of plagiarism will result in an "F" on the paper, could result in an "F" in the course, dismissal from the department and from the university. If you are unsure whether citation to a source is required, it is better to cite than not cite.

DISMISSAL

Criteria for Dismissal from the program

A student can be dismissed from the program for several reasons: violations of policies of the MLS program or clinical affiliate. Dismissal from the program does not mean the student is dismissed from the university. However, if dismissed they will not be allowed to get a degree from the MLS program

1. Initiation of the disciplinary policy (verbal counseling, written warnings, or immediate dismissal) can result from policy infractions. The disciplinary action depends on the seriousness of the offense, in the judgment of faculty and management. Some examples include unprofessional or inappropriate behavior such as:
 - Fighting, uncooperative, threatening, or intimidating behavior
 - Cheating or falsifying academic exercises, exams, or records
 - Unauthorized access or manipulation of patient or employee information
 - Use, possession, manufacture, distribution, purchase and/or sale of alcohol or illegal drugs or other controlled substances, or the abuse of legal drugs while on or in the Hartford Hospital's or Clinical Laboratory Partners' premises or property or on business of the Clinical Laboratory Education Programs.
 - Other behaviors described in the Affective evaluation form, previously mentioned documents, and the reasonable judgment of faculty and management.
2. A student on probation is subject to dismissal for **any** additional infraction that initiates probation.
3. A student that has been on probation for failing a major course (i.e., Chemistry, Microbiology, Hematology, and Transfusion Services) will be dismissed for any additional infraction that initiates probation in a major course.
4. A student that has been on probation 2 separate times will be dismissed for **any** additional infraction that initiates probation.

MLS STUDENT GRIEVANCE POLICY

Please review the grievance policy covered in the Key to UB Student Handbook.

<http://www.bridgeport.edu/Media/Website%20Resources/documents/life/KeytoUB2010.pdf>

Prior to initiating a formal grievance, MLS students are encouraged to attempt to resolve matters informally through discussion between the involved parties. The MLS Program Director and/or the Clinical Education Coordinator may facilitate this process. If the grievance involves the MLS Program Director, the Dean of the College of Arts and Sciences may be called upon to facilitate the informal resolution process. If informal resolution fails or if the student wishes to forego informal resolution, the formal grievance process may be initiated.

REGISTRATION, COSTS, REFUNDS

In consultation with their advisor or Program Director, students are responsible for registering for classes each semester. Students are responsible for their own progress toward graduation.

Students are also responsible for arranging for payment of tuition and fees to UB. Current tuition and fees, including policies regarding withdrawal and refunds, can be found on the UB website.

<http://www.bridgeport.edu/admissions/undergraduate/tuitionandfinaid/tuitionandfees>

CERTIFICATION EXAMINATIONS

Students are responsible for applying to take certification examinations, including paying the fees and sending transcript(s). The MLS Faculty recommend that graduates take the American Society for Clinical Pathology Board of Registry (ASCP-BOR) examination. The examination is taken on computers at various testing sites. ASCP-BOR now requires continuing education in order to maintain certification.

Currently there is no licensure for laboratory personnel in Connecticut, but some states do have licensure. Most, if not all, of these states recognize the ASCP certification, but state licensure is still required.

EMPLOYMENT

Employers frequently call or send information about jobs to the MLS Program Director who will make this information available. Many students are offered employment even before they graduate.

If students are employed during the MLS Program, they should make sure that their hours do not overlap with MLS courses or rotations. Attendance is critical to your success in the program and is often part of the course grade. Many students choose to limit their work load in order to maximize the MLS experience and insure success in the MLS profession.

If a student wants to work, it is optional and paid. Students can never be used to replace bench techs in shortage situations. However students can work after school and can sign out work under supervision.

BACKGROUND CHECKS AND DRUG SCREENS

Students need to be aware that some clinical sites and states may require background checks and drugs screens of employees and students who have direct patient care. The student is responsible for the cost, usually about \$50. Drug screens are usually ordered on a random basis.