

University of New Hampshire BMS:MLS Program



Student Handbook

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Welcome to the Biomedical Science : Medical Laboratory Science Program

This handbook has been prepared as an additional resource for UNH Biomedical Science - Medical Laboratory Science option students. Other important student information may be obtained in the current editions of the [UNH Undergraduate Catalog](#) and the [Student Rights, Rules and Responsibilities](#) publication or on the [UNH website](#) and associated web pages. Your advisor is also an excellent source of information and can help you find answers to your questions or refer you to resources to help you with problems, whether personal or academic in nature.

This handbook should be kept throughout your undergraduate years as a UNH Biomedical Science - Medical Laboratory Science student. It contains a great deal of useful and important information that you will need to refer to in the future. You will be held responsible for knowing the policies and information found in this handbook. After reading the handbook, you are required to sign the MLS Program Policies Statement of Acknowledgement and turn it in to your MLS advisor. As procedures and policies are subject to change, it is the individual student's responsibility to annually review the latest edition of the student handbook and locate the most up to date resources.

Disclaimer: This handbook is not a contract or a guarantee. While our curriculum is generally stable over time, whether a particular course is offered, and if so in what semester and time slots, is subject to many variables. Additionally, this handbook is to not conflict with UNH policies and in the event of inadvertent conflict, all UNH policies take precedence over items listed in this handbook.

Contact Information

BMS:MLS Program Office: 225 Kendall Hall (603) 862-1376
BMS:MLS Program Laboratory: 190 Spaulding Life Science (SLS) (603) 862-1176
BMS:MLS Website: <https://colsa.unh.edu/molecular-cellular-biomedical-sciences/program/bs/biomedical-science-major-medical-laboratory-science-option>

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Program Mission Statement & Goals

The mission of the Biomedical Science : Medical Laboratory Science Program is to educate students to be highly qualified scientists who possess entry level knowledge, skills, and attitudes needed to perform proficiently in workplaces such as clinical laboratories, research settings, or in the biomedical industry. It will also prepare students to continue their education in a variety of master's and Ph.D. level programs and professional degree programs.

To accomplish this mission, the program aims to achieve the following goals for its students:

1. Provide exceptional learning experiences that foster scholarly and professional growth
2. Build an appreciation for the importance of Quality Assurance and Safety
3. Develop knowledge and skills in routine clinical laboratory methods
4. Demonstrate behaviors that reflect the attitudes and ethics expected of medical professionals.

Bachelor of Science Competencies

Upon completion of the Biomedical Science : Medical Laboratory Science degree requirements, the graduate will be prepared to:

- Apply the fundamental scientific concepts and technical skills of medical laboratory science.
- Perform laboratory analyses, evaluate laboratory data, and solve problems.
- Perform laboratory tests efficiently, accurately, and independently and correlate laboratory data with health and disease states.
- Develop, recognize, and accept personal, professional and community responsibility.
- Appreciate the need for continuing education.
- Adhere to the highest level of medical ethics.
- Effectively communicate verbally and in writing.
- Apply critical thinking and decision-making skills.

Accreditation Statement

The UNH Medical Laboratory Science Program is accredited by the National Accrediting Agency for Clinical Laboratory Science. You may contact NAACLS for more information on the web at: www.naccls.org or at 5600 N. River Road Suite 720, Rosemont, IL, 60018-2119. Telephone: 773.714.8880.

Essential Functions

Students planning on enrolling in a hospital laboratory internship in the clinical Medical Laboratory Science program must meet the Essential Function Requirements of the academic program and the Medical Laboratory Scientist profession or request reasonable accommodations to execute these essential functions.

Detailed essential functions are provided below. If you are not sure that you will be able to meet these essential functions, please consult with the Program Director for further information. These essential functions include:

Visual, Auditory, and Observational Requirements

The student will be able to:

- Demonstrate near and far visual acuity in the performance of macroscopic and microscopic analyses and the viewing of computer screens, instrument readouts, classroom blackboards, projected slides, and presentations
- Demonstrate adequate depth perception to perform manual and automated testing procedures including but not limited to pipetting into tubes, inoculating bacterial culture plates, and performing venipuncture
- Discriminate among the fine structural formed elements (cells and artifacts), and color (hue, shading, intensity, fluorescence) differences of microscopic specimens using a clinical grade binocular microscope
- Observe laboratory demonstrations of techniques and procedures
- Discriminate color reactions and consistency and clarity of biological specimens or reagents
- Read and comprehend English text, numbers, and graphs displayed in print or on a computer screen
- Answer phones, beepers, and alarms, and respond to questions and receive directions

Motor, Movement, and Physical Requirements

The student will be able to:

- Move freely and safely about a laboratory, around instruments and in other clinical environments or patient care settings and move from area(s) of risk during fire, fire drills, or bomb threats
- Reach laboratory shelves and free-standing laboratory instruments
- Work at countertops and bench tops having an average height of 40-46 inches
- Demonstrate fine and gross manual dexterity to manipulate laboratory equipment (i.e. pipettes, inoculating loops, test tubes) and adjust instruments to perform laboratory procedures using proper ergonomics
- Perform delicate manipulations which require good eye-hand coordination
- Travel to or relocate near to hospital laboratory sites for practical experience
- Perform moderately taxing continuous physical work, often requiring prolonged standing and/or sitting, bending and/or twisting over several hours
- Obtain patient specimens in a timely, safe, and professional manner (e.g. perform phlebotomy)
- Manipulate an electronic keyboard
- Grasp, hold, transport, utilize specimens, reagents, hazardous chemicals and equipment in a safe manner as needed to perform laboratory testing
- Have sufficient strength and mobility to lift and transport containers weighing up to 25 pounds as needed to perform testing and correct equipment malfunctions

Communication Requirements

The student will be able to:

- Communicate fluently in English both orally and in writing
- Legibly record and transmit laboratory information
- Read and comprehend technical and professional materials (i.e. textbooks, journal

- articles, handbooks, and instruction manuals)
- Directly communicate clearly, accurately, confidently, tactfully and respectfully with faculty members, student colleagues, staff and other health care professionals orally and in a recorded format (writing, typing, graphics, or telecommunications)
- Receive and follow verbal and written instructions and carry them out using proper channels of communication
- Independently prepare papers, cases studies, homework assignments and laboratory reports, and take paper, computer and laboratory practical examinations
- Deliver oral presentations to fellow students and health care professionals
- Effectively use computer software (word processor, spreadsheet, database, information systems), instructional technology and the Internet for communication, education, and professional purposes

Intellectual and Conceptual Abilities

The student will be able to:

- Produce accurate testing results with minimal procedural errors
- Recognize when a procedural error has been made and take corrective action
- Demonstrate the following intellectual skills: comprehension, measurement, calculation, reasoning, integration, analysis, correlation, comparison, evaluation, problem-solving and synthesis of information
- Pass all examinations in various formats (multiple choice, short answer, essay) with a minimum grade of 75%
- Recognize potentially hazardous materials and equipment or emergency situations and take appropriate actions in a timely and safe manner to minimize risks to patients, self, and nearby individuals
- Recognize abnormal laboratory results (e.g., patient and QC) and take appropriate actions in a timely manner
- Effectively apply knowledge to classroom and laboratory situations
- Demonstrate critical thinking and judgment skills appropriate to a given situation
- Independently prepare, papers, laboratory reports, and take paper, computer and laboratory practical examinations
- Solve laboratory mathematical problems quickly and accurately
- Troubleshoot and correct basic equipment malfunctions

Behavioral and Social Attributes

The student will:

- Adhere to UNH Honor code (UNH Student Code of Conduct)
- Arrive on time and turn in assignments on time
- Display confidence in work at the appropriate level for knowledge and experience
- Be consistent in attendance and attention
- Be able to work both independently and as a positive contributing member of a team
- Maintain patient confidentiality and adhere to HIPPA regulations
- Exercise independent ethical judgment, integrity, honesty, dependability, accept responsibility for your own work and be forthright about errors or uncertainty
- Organize work, prioritize requests, and perform multiple tasks calmly and efficiently within given time constraints and under stressful conditions while maintaining the ability to

communicate clearly

- Manage the use of time and be able to systematize actions to complete professional and technical tasks within realistic constraints
- Possess sound psychological and emotional health and stability necessary to effectively apply knowledge and exercise appropriate judgment under conditions of physical and emotional stress
- Maintain personal hygiene and wear garments appropriate to the work setting
- Conform to the standards of appearance, language, and public behavior at a hospital laboratory site
- Be able to handle workloads that may be taxing at times
- Provide professional and technical services while experiencing the stresses of task-related uncertainty (e.g., ambiguous test order, ambivalent test interpretation), emergent demands (e.g., "stat" test order) and distracting environment (e.g., high noise levels, crowding, complex visual stimuli)
- Be able to adapt to working with unpleasant biologicals
- Function as a supportive member of the health care team, maintaining highest laboratory standards
- Be flexible and creative and adapt to professional and technical changes
- Support and promote the activities of fellow students and health care professionals
- Show respect for individuals of different age, ethnic background, religion, and sexual orientation
- Critically evaluate own performance, accept and act on constructive criticism and look for ways to improve (e.g., participate in enriched educational activities).
- Follow all established policies and procedures of the program and hospital laboratory affiliate
- Comply with state and federal criminal laws (including drug laws)

Safety Requirements

The student will:

- Use personal protective equipment including clothing or gear such as masks, goggles, gloves, lab coats splash guards and shields
- Work safely with potential chemical and biologic hazards using universal (standard) precautions
- Perform laboratory testing adhering to existing laboratory safety standards
- Provide proof of recent immunizations against infectious diseases such as TB, varicella, hepatitis B, measles, mumps, and rubella or titers prior to hospital laboratory rotations
- Submit to annual testing for exposure to tuberculosis prior to hospital laboratory rotations
- Submit proof of current enrollment in a health insurance plan prior to hospital laboratory rotations
- Submit to national background check prior to hospital laboratory rotations
- Submit to drug screening and other tests as required by specific hospital laboratory sites

Advising

Freshman are assigned to a professional advisor as their primary advisor during their first year. During this time, a faculty member will be assigned as a secondary advisor. Upon completion of the freshman year, the faculty advisor takes on the role of primary advisor moving forward. You are encouraged to make an appointment with your advisor at any time during the semester if you have questions or concerns. You are required to meet with your advisor once each semester to obtain your Registration Access Code (RAC) necessary to register for the following semester.

While your advisor will assist you in selecting appropriate courses each semester, it is ultimately your responsibility to make certain that you meet all the UNH Discovery, Inquiry, Writing Intensive (WI), Capstone, and major course requirements, and that you have completed the 128 credits (16 credits x 8 semesters) required prior to your expected graduation date.

Student Responsibilities:

1. Turn the following forms into your advisor to be kept in your academic program file:
 - a. A signed copy of the Program Policies Statement of Acknowledgement found at the end of this handbook.
 - b. A copy of the Immunization Record that you submitted to UNH Health Services that includes your Hepatitis B immunizations.
2. Seek timely advisement for academic and professional behavior concerns whenever there is a perceived need.
3. For course-related issues begin with the involved instructor(s), followed by your academic advisor, then the Department Chair and, if resolution is still not achieved, finally the Associate Dean of Undergraduate Studies.
4. Communicate if there are barriers to resolving an academic or professional behavior issue
5. Use resources available at the University that are appropriate such as student psychological and counseling services, student accessibility services, or student conflict resolution services.

Curriculum

The BMS:MLS curriculum is designed to provide all students with a background in medical laboratory science. However, it is also built to provide flexibility based upon the student's preferred professional and scholarly goals.

Program Requirements

All students in all majors at UNH must complete University Discovery/Inquiry requirements totaling approximately 40 credits. The BMS-MLS curricula include 20 of these credits as part of the foundation, bioscience core, or BMS:MLS core courses. This leaves 20 credits of University discovery requirements to fulfill outside of the major.

In addition to the 20 credits of University Discovery/Inquiry requirements included in the BMS:MLS curricula, students in this program complete:

- 17 credits of foundation courses
- 21-22 credits of bioscience core courses

- 22 credits of major required core course
- Plus five additional major elective courses totaling a minimum of 18 credits.

This brings the total major required credits to ~ 105 leaving an additional ~ 23 discretionary credits needed to achieve the 128 credits required for graduation.

Students should wait until the end of their sophomore year to decide on how they wish to use their discretionary credits and before taking courses outside of the above requirements. Discretionary credits may be used to complete:

- Hospital laboratory internship required for Medical Laboratory Scientist certification and any additional courses required for participation in the internship (20 cr.)
- Additional course requirements for Medical School (minimum 25 cr.) or Pharmacy School (25+)
- Additional course requirements for Physician's Assistant or Pathologists' Assistant programs or Direct Entry Nursing programs (min. 12 cr.)
- Complete a minor (usually requires a minimum of 20 cr.).
- Complete a study abroad (see page 22) or a national student exchange

It is difficult to complete more than one of the above options without taking courses over the summer or during the J-term or extending attendance beyond the usual 4 years (8 semesters) unless the student enters UNH with some AP credits. Students wishing to complete more than one of the above options should plan their course sequencing with their advisors during their freshman year so that they are aware of the additional attendance time that will be needed.

Students may pursue a Bachelor of Science degree in Biomedical Science : Medical Laboratory Science by following a general curriculum or one of two pre-professional curricula. Major required core courses must be completed with a C- or better.

General Curriculum

Students following the general curriculum and interested in working in clinical, biotech, or research labs. These students shall complete eight semesters of courses -including courses that emphasize theory and techniques for analysis of blood, body fluids, cells, and tissues and the clinical diagnosis of human disease.

Students interested in becoming certified Medical Laboratory Scientists must follow the general curriculum and must complete the MLS internship required program coursework. Those who meet the eligibility requirements complete seven semesters of on-campus courses and in their final semester participate in an off-campus full-time, unpaid hospital laboratory internship at an affiliated facility. To participate in a hospital laboratory internship, students must be able to comply with the essential functions presented in this handbook or request reasonable accommodations to execute these essential functions. Additionally, students choosing to pursue the clinical internship must receive a grade of C- or higher in all required BMS:MLS courses.

Pre-Professional Curriculum

Students following the pre-professional curriculum are interested in a future career as a graduate-degree prepared medical professional (e.g. Physician, Pharmacist, PA). These students will complete eight semesters of courses that include the required pre-requisite courses for admission to the program of their choice (please note that some of the pre-requisite courses for these

professional programs may not be necessary for graduation in the BMS:MLS major).

This curriculum is designed for flexibility but requires careful attention to requirements for the graduate professional program of choice. Students are strongly encouraged to consistently meet with advisors to assure course selections are aligned with their goals. Students selecting this curriculum are NOT eligible for the ASCP-BOC examination.

Course Descriptions

Specific course descriptions can be found on the [UNH Undergraduate Catalog website](#).

Capstone Experience Requirement

As part of the University of New Hampshire's Discovery requirements, all students must complete a [capstone experience](#). The Capstone experience is typically completed by senior students within the major, however students who have completed 90 credits at the end of their junior year may complete their Capstone the summer prior to their senior year. The Capstone may be met with an approved experience and is not necessarily a course.

A BMS capstone consists of the completion of a course designated as a major capstone course or a minimum of 50 hours of a non-credit capstone experience completed during a student's senior year (i.e. 90 credits earned). If not taking a capstone course, students should discuss their idea for a capstone experience with his/her academic advisor and submit a BMS non-credit capstone experience approval form to his/her advisor prior to beginning the experience. At the completion of the experience the form is signed by the experience supervisor and returned to your advisor.

You must submit a BMS non-credit capstone experience approval form for any non-credit capstone experience. This must be done prior to the experience.

Examples of Possible Capstone Courses/Experiences:

- BMS elective courses with Capstone attributes such as BMS 635, BMS 716, BMS 719, BMS 740, BMS 749 and BMS 750.
- Research projects and presentations in Microbiology, Biochemistry, Biology or related field, including IROP or SURF, INCO 790, 795 Investigations, 799 Senior Thesis
- BMS 790 Undergrad Teaching Experience (4 credits; must include a class presentation)
- Internship, community service or service learning activity in areas such as medicine, microbiology, biotechnology, medical laboratory science, etc.*
- Participation in the McNair Program.

*Requires a written agreement between student, UNH faculty supervisor & on-site supervisor. (NOTE: Internships at medical facilities often require a formal contract with UNH that includes certification of vaccinations, drug testing, etc. and take 3-4 months of advance preparation.)

Experiential Learning Policy

Laboratory professionals who wish to enter the BMS:MLS Program may receive credit for completed coursework and work experience completed during the past five years. Similar to the [UNH College of Professional Studies](#), students will be instructed to provide transcripts of previous

coursework and/or documentation of work experience to the Program Director and Faculty. These materials will be reviewed to determine if they sufficiently meet course or program learning goals. Students may also be required to earn a grade of 60% or higher on clinical comprehensive exams to assure readiness for the workforce.

Important Note on ASCP-BOC Certification

Only students who complete the General Curriculum, complete clinical internship courses (BMS 751, 752, 753, and 754), and successfully pass the clinical comprehensive exams are eligible for the ASCP-BOC MLS certification exam. This is because the general curriculum and clinical internship pre-requisites are the only curricular pathway that fully prepares the student for entry-level practice as certified medical laboratory scientists.

Sample Course Sequences

The following pages provide sample course sequences for both curriculum options outlined above. Please note that course offerings can change and these documents do not denote a guarantee of a course schedule. Students should work closely with their advisor to assure all requirements are met for their preferred curriculum.

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Please proceed to next page

Biomedical Science - Medical Laboratory Science Option General Curriculum Suggested Course Sequence
--

Freshman Year

- | | |
|--|---|
| <input type="checkbox"/> BMS 401 Intro to BMS (1)
<input type="checkbox"/> BMS 507 Anatomy & Physiology ^d (4)
<input type="checkbox"/> CHEM 403 Gen Chemistry (4)
<input type="checkbox"/> ENGL 401 Freshman English (4)
<input type="checkbox"/> Discovery Course ^a (4) | <input type="checkbox"/> CHEM 404 Gen Chemistry (4)
<input type="checkbox"/> BMS 508 Anatomy & Physiology ^d (4)
<input type="checkbox"/> Statistics ^b (4)
<input type="checkbox"/> Discovery ^a /Inquiry and/or WI (4) |
|--|---|

Sophomore Year

- | | |
|--|--|
| <input type="checkbox"/> BMS 503/504 Gen Microbiology (5)

<input type="checkbox"/> GEN 604 Principles of Genetics (4)
<input type="checkbox"/> Discovery Course ^a (4)
<input type="checkbox"/> Discovery ^a /Inquiry and/or WI (4) | <input type="checkbox"/> BMS 602/603 Pathogenic Micro ^c (5)
<input type="checkbox"/> BMS 560/561 Body Fluids ^c (4)
<input type="checkbox"/> CHEM 545/546 Organic Chemistry ^e (5)
<input type="checkbox"/> Major Elective (BMS 640 ^d /641 ^d) (4) |
|--|--|

Junior Year

- | | |
|---|---|
| <input type="checkbox"/> Major Elective w/Lab (BMS 644 ^d /645 ^d /646 ^d) (6)
<input type="checkbox"/> BMCB 658/659. Biochemistry (5)
<input type="checkbox"/> BMS 650 Molecular Diagnostics ^c (4) | <input type="checkbox"/> BMS 642/643 Immunology/Serology ^c (4)
<input type="checkbox"/> BMS 720 Myco, Parasit, Vir ^c (3)
<input type="checkbox"/> (BMS 721 MPV Lab ^d) (2)
<input type="checkbox"/> Major Elective WI (4) (BMS 610 ^d lab management) |
|---|---|

Senior Year

- | | |
|--|--|
| <input type="checkbox"/> Elective or Major Elective w. lab (4) (BMS 656/657 ^d)
<input type="checkbox"/> Discovery ^a Course (4)
<input type="checkbox"/> Major Electives w/lab or 2 non-lab major electives (BMS 658 ^d /659 ^d) (5)
<input type="checkbox"/> Major Elective Capstone (BMS 750 Case Studies ^d) | <input type="checkbox"/> Elective (BMS 751 ^d)
<input type="checkbox"/> Elective (BMS 752 ^d)
<input type="checkbox"/> Elective (BMS 754 ^d)
<input type="checkbox"/> Elective (BMS 753 ^d) |
|--|--|

a Discovery categories to select from: Historical Perspective (HP), World Culture (WC), Fine and Performing Art (FPA), Social Science (SS), Humanities (HUMA)

b Statistics courses: BIOL 528, PSYC 402, SOC 502 MATH 439

c Core BMS courses required of all MLS option students. BMS 721 lab not required of non-clinical internship students.

d Courses required for students interested in participating in an MLS clinical generalist internship. BMS 790 Undergraduate Teaching Experience may be taken Fall or spring of senior year.

e Students are required to take either CHEM 545/546 OR the entire year-long Organic Chemistry Experience (CHEM 651, 653, 652, and 654. A single semester of the year-long, 600-level will not suffice or be considered equivalent to 545/546.

Discovery Requirement

Group	Course	Complete
1WS	ENGL 401	_____
2QR	Stats	_____
3BS	BMS 508 or BIOL 411	_____
3PS	CHEM 404	_____
4HP	_____	_____
5WC	_____	_____
6FPA	_____	_____
7SS	_____	_____
8HUMA	_____	_____

4 Writing Intensive Courses

Course	Complete
ENGL 401	_____
Discovery WI	_____
One BMS WI (610 or 750)	_____
2 nd BMS or Disc.	_____
<u>Inquiry</u>	
BIOL 411 or Disc.	_____
<u>Capstone</u>	
BMS 750, 790, 795, 796, or 799	_____

5 Major Elective Courses

2 courses w/ labs	_____
1 WI	_____
1 capstone	_____
1 add. course	_____

**Biomedical Science - Medical Laboratory Science Option Pre-
Professional Suggested Schedule – Pre-PA/Path Assistant**

Freshman Year

___ BMS 401 Intro to BMS (1)
___ BMS 507 Anatomy & Physiology (4)
___ CHEM 403 Gen Chemistry (4)
___ ENGL 401 Freshman English (4)
___ Discovery Course^a (4)

___ CHEM 404 Gen Chemistry (4)
___ BMS 508 Anatomy & Physiology (4)
___ Statistics^b (4)
___ Discovery^a/Inquiry and/or WI (4)

Sophomore Year

___ BMS 503/504 Gen Microbiology (5)

___ GEN 604 Principles of Genetics (4)
___ Discovery Course^a (4)
___ Discovery^a /Inquiry and/or WI (4)

___ BMS 602/603 Pathogenic Micro^c (5)
___ BMS 560/561 Body Fluids^c (4)
___ CHEM 545/546 Organic Chemistry^d (5)
___ Major Elective (recommended BMS 640) (2)

Junior Year

___ Major Elective w/Lab (5)
___ BMCB 658/659. Biochemistry (5)
___ BMS 650 Molecular Diagnostics^c (4)

___ Major Elective (w/lab or BMS 721 lab)
___ BMS 720 Myco, Parasit, Vir^c (3)
___ BMS 642/643 Immunology/Serology^c (4)
___ Discovery^a (4)

Senior Year

___ Elective – Social Science (4)
___ Major Elective WI (4)
___ Elective
___ Major Elective Capstone

___ MATH 418 or 424B (4)
___ Elective WI – English 502 or 503 (4)
___ BIOL 411 Molec and Cell Biology (4)
___ Elective (4)

a Discovery categories to select from: Historical Perspective (HP), World Culture (WC), Fine and Performing Art (FPA), Social Science (SS), Humanities (HUMA)

b Statistics courses: BIOL 528, PSYC 402, SOC 502 MATH 439

c Core BMS courses required of all MLS option students.

d Students are required to take either CHEM 545/546 OR the entire year-long Organic Chemistry Experience (CHEM 651, 653, 652, and 654. A single semester of the year-long, 600-level will not suffice or be considered equivalent to 545/546.

Discovery Requirement

<i>Group</i>	<i>Course</i>	<i>Complete</i>
1WS	ENGL 401	_____
2QR	Stats	_____
3BS	BMS 508 or BIOL 411	_____
3PS	CHEM 404	_____
3ETS	BMS 650	_____
4HP	_____	_____
5WC	_____	_____
6FPA	_____	_____
7SS	_____	_____
8HUMA	_____	_____

4 Writing Intensive Courses

<i>Course</i>	<i>Complete</i>
ENGL 401	_____
Discovery WI	_____
One BMS WI (610 or 750)	_____
2 nd BMS or Disc.	_____
 <u>Inquiry</u>	
BIOL 411 or Disc.	_____
 <u>Capstone</u>	
BMS 750, 790, 795, 796, or 799	_____

5 Major Elective Courses

2 courses w/ labs	_____
1 WI	_____
1 capstone	_____
1 add. course	_____

Students may add BMS 721-MPV lab when they take the core BMS 720 MPV course as one of the 2 required labs and then complete 1 additional non-lab course to bring the total number of major electives to 5.

Biomedical Science - Medical Laboratory Science Option Pre- Professional Suggested Schedule – MD, DO, PharmD, etc
--

Freshman Year

- | | |
|--|--|
| <input type="checkbox"/> BMS 401 Intro to BMS (1)
<input type="checkbox"/> BMS 507 Anatomy & Physiology (4)
Or BIOL 411 (4)
<input type="checkbox"/> CHEM 403 Gen Chemistry (4)
<input type="checkbox"/> ENGL 401 Freshman English (4)
<input type="checkbox"/> Discovery Course ^a (4) | <input type="checkbox"/> CHEM 404 Gen Chemistry (4)
<input type="checkbox"/> BMS 508 Anatomy & Physiology (4)
<input type="checkbox"/> Statistics ^b (4)
<input type="checkbox"/> Discovery ^a /Inquiry and/or WI (4) |
|--|--|

Sophomore Year

- | | |
|--|---|
| <input type="checkbox"/> BMS 503/504 Gen Microbiology (5)
<input type="checkbox"/> CHEM 651/653 Organic Chemistry ^d (5)
<input type="checkbox"/> GEN 604 Principles of Genetics (4)
<input type="checkbox"/> Discovery Course ^a (4)
<input type="checkbox"/> INCO 403 Healthcare Professions (2) | <input type="checkbox"/> BMS 602/603 Pathogenic Micro ^c (5)
<input type="checkbox"/> BMS 560/561 Body Fluids ^c (4)
<input type="checkbox"/> CHEM 652/654 Organic Chem ^d (5)
<input type="checkbox"/> Major Elective (recommended BMS 640) (2) |
|--|---|

Junior Year

- | | |
|---|---|
| <input type="checkbox"/> Major Elective w/Lab (5)
<input type="checkbox"/> BIOL 411(4)
<input type="checkbox"/> Major Elective (4)
<input type="checkbox"/> PHYS 401 Physics (4) | <input type="checkbox"/> BIOL 412 (4)
<input type="checkbox"/> Math 424B (4)
<input type="checkbox"/> BMCB 658/659 Biochemistry 5)
<input type="checkbox"/> PHYS 402 Physics (4) |
|---|---|

Senior Year

- | | |
|--|---|
| <input type="checkbox"/> BMS 650 Molecular Diagnostics ^c (4)
<input type="checkbox"/> Discovery ^a Course (4)
<input type="checkbox"/> Major Elective WI (4)
<input type="checkbox"/> Major Elective Capstone (4)
BMS 790, 795, INCO 790 or other | <input type="checkbox"/> BMS 720 Myco, Parasit, Vir ^c (3)
<input type="checkbox"/> BMS 642/643 Immunology/Serology ^c (4)
<input type="checkbox"/> English WI (502 or 503) (4)
<input type="checkbox"/> Discovery ^a Course (4) |
|--|---|

a Discovery categories to select from: Historical Perspective (HP), World Culture (WC), Fine and Performing Art (FPA), Social Science (SS), Humanities (HUMA)

b Statistics courses: BIOL 528, PSYC 402, SOC 502 MATH 439

c Core BMS courses required of all MLS option students.

d Students are required to take either CHEM 545/546 OR the entire year-long Organic Chemistry Experience (CHEM 651, 653, 652, and 654. **A single semester of the year-long, 600-level will not suffice or be considered equivalent to 545/546.** For Medical and Pharmacy schools, the year-long sequence is required in most instances. Please refer to individual graduate program requirements to assure you complete the correct organic chemistry sequence.

Discovery Requirement

Group	Course	Complete
1WS	ENGL 401	_____
2QR	Stats	_____
3BS	BMS 508 or BIOL 411	_____
3PS	CHEM 404	_____
3ETS	BMS 650	_____
4HP	_____	_____
5WC	_____	_____
6FPA	_____	_____
7SS	_____	_____
8HUMA	_____	_____

4 Writing Intensive Courses

Course	Complete
ENGL 401	_____
Discovery WI	_____
One BMS WI (610 or 750)	_____
2 nd BMS or Disc.	_____
Inquiry	
BIOL 411 or Disc.	_____
Capstone	
BMS 750, 790, 795, 796, or 799	_____

5 Major Elective Courses

2 courses w/ labs	_____
1 WI	_____
1 capstone	_____
1 add. course	_____

Recipe for Academic Success

The following is a 4-year plan to make the most of your 4 years at UNH.

First Year - Inquire

- Go to class.
- Manage your time effectively by using a planner – be sure to build in time for rest and fun
- Meet with your academic advisor when required (once a semester) or as needed.
- Get to know at least one of your professors.
- Assess your interests, strengths, and skills with a COLSA Career Advisor.
- Explore interests through student organizations and volunteer experiences,
- Start planning a significant summer experience whether it is work, community service, travel, or better still, a combination.
- Thinking about medical school? Meet with Pre-Professional Health Advising.

Sophomore Year – Explore

- Tour laboratories or arrange for shadowing opportunities
- Identify ways to develop and utilize your leadership skills.
- Talk to your advisor about your academic goals.
- Talk to a Career Advisor about internship possibilities.
- Develop a resume and have it reviewed at the COLSA Career Center.
- Explore undergraduate research opportunities through the Hamel Research Center.
- Thinking about a clinical internship? Let your major advisor and/or the MLS Program Director know

Junior Year - Expand

- Meet with a COLSA Career Advisor. You can schedule an appointment through "Handshake".
- Talk to your major advisor about what you want to do after graduation.
- Identify professors for future recommendations.
- Volunteer to develop skills and explore interests.
- Attend the Graduate and Professional School Fair in October.
- Update your resume, develop your elevator pitch, and sign up for a practice interview.
- Start networking; faculty, friends, family.
- Attend Career/Internship fairs, collect business cards, and talk to employers
- Inquire with your MLS professors about becoming an undergraduate TA in the MLS courses
- Begin to prepare for clinical internships if you have chosen that curriculum

Senior Year-Act

- Start early! Do not wait until May to finalize your post-grad plans
- Line up your references: you will need at least three.
- Update your resume, continue to network, and fine tune your interviewing skills.
- Take advantage of on-campus interviewing.
- Research and target companies attending the UNH Career/Internship Fair.
- Keep practicing your 3-minute elevator pitch. Whether you are looking for a job, going to graduate or professional school, or traveling for a year, you will need to be good at this.

UNH Resources

MyUNH Account

UNH offers a variety of online services. These services are all accessed through your MyUNH account. This account allows you to pay your enrollment/housing deposit, set-up a parent portal account, indicate your housing and dining preferences, and check your financial aid status. Once a UNH student, you will use your account for even more (ie; register for courses, pay your tuition bill, access you class schedule, view your UNH transcript, etc.). You should activate your MyUNH account as soon as possible.

How to Set-up your MyUNH Account

1. Go to the MyUNH website at <http://my.unh.edu>
2. Select the Login Help tab
3. For New User Activation, select Find Your Username
4. Follow the on-screen directions to get your username and to set your password. You will be asked for your assigned student ID (found at the bottom of your acceptance letter), and your date of birth.

UNH Email Account

Your UNH Email address is username@unh.edu. You must use your entire email address to log into your email. Your WildcatsMail is the official method used by university to communicate with enrolled students. Information about billing, course registration, course schedules, and important notices/reminders will all be communicated to you via your UNH WildcatsMail account.

To get started using your UNH WildcatsMail account, go to <http://studentemail.unh.edu/> and click on "Ready to Get Started?"

Students are responsible for all information sent via the University assigned account and should check this account frequently. If the student chooses to forward the University email account they are still responsible for all the information including attachments. For this reason, forwarding is not recommended.

UNH Mobile Application Suite

Stay connected to University of New Hampshire (UNH) with the official [UNH mobile app](#). It features a roster of apps that can be customized to your campus location and individual preferences. Get UNH news and events, find your way around campus, check real time bus arrival predictions and bus arriving alerts, dining hours, menus, and more - all at your fingertips.

Parking/Bus Service

If you are planning to bring a motor vehicle to campus, go to the [Parking Services website](#) or call 603-862-1010. Please note that UNH may not be able to accommodate every request for a permit.

The Wildcat Transit bus service is available free of charge to undergraduate students with a valid UNH ID. Go to the [website](#) or call 603-862-2328 for information on schedules and routes.

Psychological and Counseling Services (PACS)

Life on a college campus can be exciting and challenging. The PACS multidisciplinary team composed of psychologists, social workers, and psychology trainees are highly skilled at addressing the unique needs of college students and fully committed to enhancing students' ability to fully benefit from the University environment and academic experience. Part of PACS mission in meeting the emotional and mental health needs of the campus community is by reaching out to those who may not seek counseling services; decreasing stigma regarding mental health concerns and treatment; as well as increasing the campus' awareness of PACS services.

PACS is located on the 3rd floor of Smith Hall. During the academic year, PACS is open 8 a.m-5 p.m. Mon, Thur., Friday and 8 a.m-8p.m. Tues and Wed. Please call (603) 862- 2090/TTY: 7-1-1 or 800-735-2964 (Relay NH) or visit us in person to make an appointment.

For after-hours emergency services, students in crisis after 5pm or on weekends may call 862-2090/TTY: 7-1-1 or 800-735-2964 (Relay NH) and have the call forwarded to speak with someone from the Center for Behavioral Health at Portsmouth Regional Hospital. In-person evaluations after hours are conducted at Portsmouth Hospital in the ER by on-call clinicians of the Center for Behavioral Health; students and/or their insurance companies are billed for these face-to-face evaluations. Students transported to the ER by ambulance will be financially responsible for those services. Learn more at <https://www.unh.edu/pacs/>.

Center for Academic Resources (CFAR)-Student Support Services

Are you a student who wants to improve your GPA, feel more prepared for your exams, know how to use your time more efficiently, or learn more effective ways to take notes or read your textbook? Everyone, at some point in college, feels challenged by a course. Luckily, there is a lot of support available for those who look for it.

The Center for Academic Resources (CFAR) offers a wide range of academic support services available to all undergraduate students. Services include learning skills instruction, peer support, and drop-in tutoring for selected courses. CFAR is located on the 2nd floor of Smith Hall and may be reached at 603-862-3698. Learn more at www.unh.edu/cfar.

Health Services

UNH Health Services Center provides comprehensive primary medical care, laboratory testing, radiology, and pharmacy services. The phone number is 603-862-1530. Learn more at [their website](#).

Student Accessibility Services (SAS)

Student Accessibility Services ensures reasonable accommodations and equal access to all UNH students with a documented disability. We provide services to students who have permanent or temporary disabilities that affect academics, housing, and parking.

Please communicate effectively and in a timely manner with your professors regarding your specific accommodations and how they can be met in each course. Course instructors are not able to provide accommodations in a course without documentation from SAS. However, the sooner you coordinate with SAS and your instructor, the more effective the accommodation.

SAS is in Smith Hall room 201. Any student with a documented disability upon enrollment is advised to contact them at 603-862-2607. Learn more at [their website](#).

Career Exploration Office

The St. Martin Career Exploration Office is a full-service career development office providing comprehensive professional development to students and expanded corporate engagement to our employer partners. They are in Rudman Hall, room G1. Learn more at [their website](#).

Registrar's Office

The Registrar's Office is responsible for registration and academic record keeping for all students at the University. They process all requests for registration and all records changes. The office maintains students' permanent records, and produces student schedules, data audits, and grade reports.

Graduation staff track students' progress toward completion of Discovery and University requirements and provide degree audits to students. The office also provides official and unofficial transcripts and enrollment verifications for current students and alumni. The Registrar acts on residency appeals and requests for change of residency status. Students may visit the office in Stoke Hall. Learn more at [their website](#).

Pre-Professional Health Advising

Advising is available for UNH students, alumni, and post baccalaureates pursuing health professional careers. The Pre-Health Advising Office provides support throughout the process of preparing for health professions school from advising on the courses they should take to helping navigate through the complex steps of the application process.

If you plan on attending any type of graduate medical professional school, you should contact the Pre-Professional Health Programs advising located in Rudman Hall, room G01A. Learn more at [their website](#).

Writing Center

The Connors Writing Center offers free, one-on-one writing conferences to current members of the UNH community: students, faculty and staff. They work with writers from all disciplines on many kinds of academic writing. Their fifty-minute conferences are conducted by trained writing assistants, who are UNH undergraduate and graduate students. Collaboration is the core of the Connors Writing Center approach. Together, writer and writing assistant work to brainstorm and find a path through the revision process. The center is in Dimond Library room 329 and may be reached at 603-862-3272 or by email at writing.center@unh.edu. An appointment is recommended. Learn more at [their website](#).

Mathematic Center (MaC)

The Mathematic Center offers walk-in help to any student taking a 300- or 400-level mathematics course at UNH (i.e. Math 418, Math 424B, Math 425). MaC is in Room G33, on the bottom floor of Christensen Hall (Tower B). The MaC Center opens the 2nd week of classes on Monday and Wednesday from 1:00- 9:00 pm, on Tuesday and Thursday from 9:00 am - 5:00 pm, on Friday from

1:00 - 5:00 pm and on Sunday from 2:00 pm -5:00 pm. For more information go to [their website](#) and click on Help Center or call 603-862-3577.

Degreeworks Degree Evaluation

The WebCat DegreeWorks evaluation is a tool available for students and advisors to assist in tracking progress toward graduation. Select Student Records and Degree Evaluation in WebCat to find DegreeWorks.

The WebCat tool does not always work well in reviewing the completion of your major requirements if you have transferred credits from another college that are counting toward your major. It also does not work in recording student capstones. Your advisor confirms that when you apply to graduate. The Degree Evaluation also may not accurately reflect your earned credits. If your WebCat degree evaluation shows that you are missing one of the degree requirements that you believe has been covered by a course you have taken, please contact the COLSA Advising Director for a review.

Please make sure you understand your major requirements, and review with your advisor your progress toward completions of your major coursework each semester. To see an accurate accounting of your earned credits, view your Academic Transcript on WebCat under Student Records. Please remember it is your responsibility to make sure all the requirements necessary for graduation are met. Make sure you understand the requirements of your degree and major. Contact the Graduation office in the Registrar's office if you have questions about your Discovery, Writing Intensive, and Inquiry requirements. Contact your advisor if you have questions about your major requirements.

Honors In Major (HIM)

Honors in Major offers students the opportunity to undertake in-depth, challenging work in their field of study. The program emphasizes student-led, individualized curricula and encourages the formation of working relationships between students and faculty. Honors in Major is open to any UNH student with a qualifying GPA. Students in the University Honors Program must complete Honors in Major to graduate with an Honors distinction, but it is not necessary to be a member of the University Honors Program to pursue Honors in Major.

More details can be found on the [Departmental Honors Website](#).

Declaring a Minor

A student may earn a minor in any undergraduate discipline designated by the University. Students should not plan to begin a minor until their junior year or upon completion of their freshman and sophomore major course work. They should also consult with their academic advisor and an advisor in the minor. A minor typically consists of:

- 20 or more semester hours of credit.
- A grade of C- or better and a 2.00 gpa in courses that the minor department approves
- Courses taken on Pass/Fail basis may not be used for a minor.
- No more than 8 credits used by the student to satisfy major requirements may be used for the minor.

To declare a minor:

1. Check with the Department in which you want to minor for specific requirements. Some departments require students to file an Intent-to-Minor form for departmental use; it is not the same as the Certification of Completion of Minor Form.
2. Complete a Certification of Completion of Minor Form when you have completed the minor or before the deadline during your last semester.
3. Have the form signed by the minor supervisor, major adviser, and College Dean.
4. The College Dean will forward the completed form to the Registrar's Office for processing. Minors will be posted to the student's record once all coursework is completed.
5. Minors do not appear on diplomas.

Quick Guide to Important University Offices

Most University Offices are open from 8:00 am -4:30 pm M-F only.

Phone numbers are all area code 603.

Office & Location	Telephone	Website
Main Campus Directory	862-1234	https://www.unh.edu/about/directories
Admissions – Smith Hall	862-1360	https://www.unh.edu/admissions
Business Services – Stoke Hall	862-2230	www.unh.edu/business-services
Dining Services - Holloway Commons	862-1821	https://www.unh.edu/dining/
Student Accessibility Services (SAS)- 201 Smith Hall	862-2607	www.unh.edu/studentaccessibility
Financial Aid – Stoke Hall	862-3600	www.unh.edu/financial-aid
First Year Programs - Hood House, 114	862-3488	www.unh.edu/orientation
Housing - 10 Academic Way	862-2120	www.unh.edu/housing
Registrar – Stoke Hall Room 180	861-1500	www.unh.edu/registrar

Program Policies

Academic Honesty & Student Conduct

Academic integrity and appropriate conduct are critical for students – particularly those in a program focused on healthcare and life sciences. Students should review the complete list in the [UNH Student's Rights, Rules and Responsibilities Handbook](#). Any deviation from principles expected of students will be dealt with according to the rules explained in that handbook.

On-Campus Attendance

Students are expected to be on-time and present for all their BMS:MLS lecture and lab sessions. It is not possible to repeat lecture or labs for individual students. In case of an absence from a laboratory session, students should notify their instructor as soon as reasonably possible to their anticipated absence.

Students missing 3 or more laboratory sessions in any BMS:MLS course will receive an academic F (AF) and will need to repeat the laboratory section of the course the following year.

Communication

Students are expected to check their UNH email account routinely (at least once a day during the work week). This is the most widely used communication system between the university, faculty and students. As such, not checking could be prohibitive to your success. A failure to read important notifications sent via email will not be considered an adequate excuse for missing deadlines or other important items.

Students should consult with their instructors on the instructor's timeline for replies.

Confidentiality

Students are expected to maintain patient confidentiality when dealing with patients or patient information in clinical environments. Maintaining confidentiality means that the student must not discuss patient information outside of the learning environment including test results, conditions, or diagnoses. In addition to Federal Laws pertinent to privacy (e.g. HIPAA), students are required to follow clinical partner policies that are related to this. Breaches of policy will lead to dismissal from the program.

Progression In Major

Students are expected to continue to progress in their major each semester according to the plan agreed upon with their advisor. Students who do not progress in the major for more than one semester must either select a new major or meet with the Associate Dean prior to being able to register for further courses.

Textbook Purchase

Students are expected to obtain all required textbooks. BMS:MLS students planning on a hospital laboratory internship should retain their MLS course textbooks, notes and laboratory notebooks and exercises for use during their internship experience. Any student unable to obtain a required textbook in any MLS course should notify the instructor prior to or on the first day of class.

Transferring Majors

Students who do not progress in the major for more than one semester will be asked to transfer to a more suitable major. The student is expected to review other potential majors by visiting their websites and arranging to meet with a faculty advisor in those potential majors. Some majors accept any student in good standing and others have an application process that might include a specific GPA requirement and/or the completion of several courses with acceptable grades.

It is up to the student to seek accurate information about transferring to another major. Once the student is certain they will be accepted into their desired major they may complete an online request to change their major via WebCat.

Students transferring into BMS: MLS later than sophomore year who wish to pursue a clinical internship may not be able to complete all requirements in four years. Students are encouraged to meet with their MLS advisor and determine an academic plan. Some discovery courses may be taken during J-term or the summer to complete all requirements on time.

Undergraduate Student Teaching Assistants

Once a student has successfully completed a BMS: MLS laboratory course they may be eligible to be an undergraduate teaching assistant for that course the following year. This is a great opportunity for the student to review the course material and demonstrate their interpersonal, organizational, and problem-solving skills as well as their dependability, resourcefulness, and self-confidence. Another benefit of being a teaching assistant is the professional working relationship the student develops with the course instructor. Due to the nature of this working relationship, the instructor will be better able to provide relevant recommendations for internships, employment, scholarships, awards, or continuing education.

Use of Personal Electronic Devices in the Classroom

Using personal electronic devices in the classroom setting can hinder instruction and learning, not only for the student using the device but also for other students in the class. To this end, the University establishes the right of each faculty member to determine if and how personal electronic devices can be used in the classroom.

1. Instructors may restrict or prohibit the use of personal electronic devices in their classroom or any other instructional setting.
2. An instructor may allow students to use laptops or other devices for taking notes or class work.
3. Students will be directed to turn off personal electronic devices if the devices are not being used for class purposes. If the student does not comply, the student may be asked to leave the classroom.
4. In establishing restrictions, instructors must make reasonable accommodations for students with disabilities in working with the Office for Disabilities Services.
5. The default provision is that students are not permitted to record (whether audio or visual or both) any part of a class/lab/other session unless explicitly granted permission to do so by the instructor.
6. Student electronic devices are prohibited in the SLS-190 lab due to safety restrictions.

Grading

Each faculty member will establish a grading rubric and scale in each course offered. The rubric and the scale shall be presented fairly in the course syllabus for students to review and ask questions about at the start of any given semester.

A passing grade for in-major required core courses is a C- or better. Students wishing to pursue clinical internships as part of the general curriculum must obtain a C- or higher in all required BMS:MLS Courses.

Leave of Absence and Withdrawal Information

Students interested in applying for leave of absence should contact the Leave Coordinator in the Registrar's Office prior to the first day of classes of the semester of intended leave. Applications are subject to approval by your major department, your college Dean's office, and the housing office (if you currently live in UNH housing). Remember to also contact the Financial Aid Office to discuss your financial aid status.

Withdrawing completely from the University is a major decision. You may wish to consider taking a leave of absence, if you are eligible, or taking a reduced course load. Visit the [Registrar website on this topic](#) for more details.

Transfer Credits

The Registrar's Office is responsible for evaluating credits transferred from another institution and is the final authority on transferability of credit. If you wish to take a course at another institution, you will need to speak with your advisor about your plans and complete a Course Credit Transfer Prior Approval Form. Forms are in the Registrar's Office in Stoke Hall or on [their website](#).

Students should be mindful of rules and requirements related to transfer credit. Details can be found on the [UNH Admissions Website](#).

It is important to once again note that the above represent general guidelines and practices but the ultimate decision on transfer credits is the University's Registrar Office.

Grievance & Complaint Procedure

The UNH Catalog contains information on Students Rights, Rules, and Responsibilities. This includes a policy for students to file grievances or complaints against Faculty, Staff, or TA's when necessary. Details on the campus grievance and complaint procedures can be found on the [Catalog Website](#).

Program Completion & Graduation

To graduate from the BMS:MLS program, students must complete the degree requirements as outlined in the [UNH Undergraduate Catalog](#). Additionally, students completing the clinical internship options must receive a passing grade on all clinical comprehensive exams, skill evaluations, and behavioral evaluations to be eligible for the ASCP-BOC MLS exam.

Please note that for students who complete the clinical internship component of the general curriculum, taking a national certification exam is **not** a requirement for graduation.

When you are nearing completion of your degree, you must apply for Graduation. When you apply to graduate, you are informing the Registrar's Office of the term you expect to complete all your degree requirements. More information can be found at the [Registrar's Website](#). Details on the annual Commencement ceremony can also be found [online](#).

Program Probation and Suspension

The program adheres to the [UNH Student's Rights, Rules and Responsibilities Handbook](#). Failure for students to follow rules and responsibilities outlined in that handbook – or provided in this program-specific handbook may result in program probation or suspension. Due process will be provided to the student as outlined in the campus handbook.

Code of Ethics

All students – regardless of curricular option – should strive to adhere to the [ASCLS Code of Ethics](#).

Health & Safety

Health and Liability Insurance

UNH students are required to have proof of health insurance coverage. Liability insurance for students participating and enrolled in internships is provided by the University.

Immunizations

All BMS:MLS majors are strongly urged to receive vaccines congruent with those expected of healthcare professionals. This typically includes (but is not limited to) Tdap, Hepatitis B, MMR, Varicella, and Meningococcal vaccines.

Due to the nature of experiences in the student teaching laboratory a completed series Hepatitis B immunizations is highly encouraged. If you have not already received HBV immunizations you should begin the series as soon as possible. The UNH Student Health Services or other primary care providers offer the HBV and other immunizations for students. Please reach out to your preferred provider to learn about the cost. Proof of immunizations or a waiver of liability must be submitted to the MLS office. A waiver of liability form must be signed by a student who chooses not to receive the HBV vaccine and is available from the program faculty.

Be it noted, clinical internship and phlebotomy sites require students to have vaccines in accordance with their specific site policies. This may include the vaccines listed above along with others. While the program will try to find students a site if they choose not to receive required vaccines, a student's placement on a clinical internship is not guaranteed if they do not have required vaccine records on file. Most sites will often also require a recent screening test for tuberculosis.

Universal Precautions

The Medical Laboratory Science Program is committed to developing procedures and promoting practices that support prevention of the spread of infections by blood, body fluids and tissues. Laboratory practices assume that all body fluids and tissues are potentially infectious, and that blood is the single most important source of the Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV), Hepatitis C Virus (HCV) and other bloodborne pathogens.

More details can be found in the BMS:MLS Safety Manual.

Personal Protective Equipment (PPE)

Students enrolled in BMS:MLS laboratory classes in the Spaulding Life Science (SLS) building room 190 lab will be required to purchase a disposable lab coat. The BMS:MLS program sells these directly to the students. In addition, either curved safety glasses or ones with side shields are required even if the student wears prescription eyeglasses. The lab has a supply of safety glasses that students may borrow or they may purchase their own. Lab coats and safety glasses may not be used for other laboratory classes outside of the BMS:MLS lab classroom and must remain in the SLS 190 lab.

Lab coats are disposed of at the end of each semester and students must purchase a new one at the start of the new semester.

Supervision

Students participating in on-campus laboratory learning experiences should always be working under the supervision and instruction of a faculty member or appropriate teaching assistant. Students must follow procedures as provided and should not be working in the student laboratory space without a faculty member or appropriate teaching assistant present.

Safety Training Requirements

To participate in any lab course in the Biosafety Level 2, Spaulding Life Science 190 laboratory, all students are required to complete extensive safety training. Please review the safety training manual provided in the laboratory courses and submit documentation of its completion. Students who do not have documented completion of training will not be allowed to sit for laboratory sessions until training is complete and documented.

Clinical Internship Policies and Procedures

The Clinical Internship is an option of the BMS:MLS General Curriculum. In this curriculum students complete on-campus coursework in all major disciplines of laboratory medicine and complete rotations at an affiliated clinical laboratory.

To be eligible for the ASCP-BOC MLS certification exam (or similar) students must complete the clinical internships. No other curricular options develop the full set of entry level competencies needed for entry level practice as a medical laboratory scientist.

General Requirements

Acceptance to a hospital laboratory internship is not guaranteed and is competitive based on the applicant's cumulative and MLS course grade point average (GPA), personal and faculty recommendations, and an interview. Additionally, a national background check, physical exam, proof of health insurance, urine drug testing, and health/immunization records may be required. Any additional expenses are the student's responsibility. If a positive drug screen or background check issue arises, it is the internship site that determines whether to accept the student.

Hospital laboratory affiliates accept qualified students without discrimination of race, color, religion, gender, national origin, age, marital or veteran status or disability who meet the program's essential functions with reasonable accommodations.

Academic Eligibility

In addition to items discussed above, to be eligible to apply and attend an internship the student must maintain a 2.5 cumulative GPA and a C or better in all the MLS internship pre-requisite courses - with a maximum of one course repeated for a better grade.

The required MLS internship pre-requisite courses for the hospital laboratory internship are:

- BMS 602/603 Pathogenic Microbiology
- BMS 610 Laboratory Management
- BMS 640/641 Phlebotomy
- BMS 560/561 Body Fluids

- BMS 642/643 Immunology/Serology
- BMS 644/645/646 Hematology and Hemostasis
- BMS 650 Molecular Diagnostics
- BMS 656/657 Immunohematology/Blood Banking
- BMS 658/659 Medical Biochemistry/Clinical Chemistry
- BMS 720/721 Mycology/Parasitology/Virology
- BMS Case Study Courses.

Application for Clinical Internships

Students should contact the MLS Program Director no later than April 1 of their Junior year to express interest in completing the clinical internship option. In the case of transfer students who may need to complete clinical internships outside the traditional spring semester, this date should be October 1 of the Junior year. Upon receipt, the program director will have the student complete a clinical internship application form.

Student applications shall be evaluated collaboratively by the MLS faculty using a pre-established rubric that assesses a student's interest and knowledge in the medical laboratory profession, critical thinking abilities, ethics, and ability to function effectively in a team. Students must achieve an average aggregated score of at least 35 (out of 50) to be able to go forward to a clinical internship.

Clinical Internship Placement & Capacity

Assignment to the clinical affiliates will be made with the purpose of providing the students with unbiased assignments that benefit the student's educational experience as best as possible. Please note that you may be required to relocate during this time. As noted above, Hospital laboratory affiliates accept qualified students without discrimination of race, color, religion, gender, national origin, age, marital or veteran status or disability who meet the program's essential functions with reasonable accommodations.

The program's current clinical capacity is 15 students per year. In years where there are more applicants than clinical spaces available, the students shall be ranked based upon their score on the rubric with the top 15 scores receiving placement. In cases of tied scores, preference will be awarded to the higher cumulative GPA.

If there is an unexpected change in clinical seat capacity and more students than available seats, clinical internship students will once again be ranked by rubric score (followed by cumulative GPA in the case of tied scores) to determine who has priority in placement. Those with higher scores/GPA will be placed first. All efforts will be made to accommodate other students.

Internship Coursework

Students who meet eligibility requirements and successfully complete all pre-requisites will register for the following courses: BMS 751, 752, 753, and 754. Each earns 5 academic credits. In addition to skill and behavioral performance evaluations, students will have their knowledge assessed using comprehensive exams for each major rotation.

Students must pass all skill and behavioral evaluations and each comprehensive exam to successfully complete each course. Failure to complete any item will result in a failing grade for the course.

Supervision

Students on clinical rotations are to always work under the supervision of a qualified member of the affiliate's staff. At no time should students be working independently or without supervision while partaking in the educational experience.

Clinical Affiliates

The program has a variety of clinical affiliates within New Hampshire and neighboring states. Please contact the program director (Kyle.Riding@unh.edu) for a current list of affiliates.

Student Compensation/Service Work Policy

Students may not be paid for their academic hours at the hospital laboratory affiliate. Students participating in the hospital laboratory internships are participating in the provision of laboratory services as part of their education experience and shall not be considered employees of the affiliate.

Students also shall not be entitled to any payment from the affiliate in the nature of benefits under the New Hampshire Workers' Compensation Act for any accident, illness, occurrence or event occurring in or relating to the affiliate and arising out of participation in the hospital laboratory instruction. Under no circumstances will the students be utilized as employees during program operating hours. However, students who demonstrate proficiency in a laboratory area during their internship may be permitted to work for pay under qualified supervision during their non-academic hours. Electing to do so is the choice of the student and never a requirement of the hospital laboratory internship or program.

Facility-Specific Policies

During the instruction at the hospital laboratory internship site, students shall adhere to the policies and procedures of the site and other applicable institutional rules and regulations. They must also maintain patient confidentiality and act in accordance with accepted standards of the profession. If at any time during the program, the student fails to abide by these provisions, he/she may be removed from the hospital laboratory internship after consultation with the University of New Hampshire Program Director or other representative. If a student fails to satisfy the UNH Standards of Ethics and or Conduct as stated in the UNH Student Rights, Rules and Responsibilities he/she may be placed on probation or dismissed from the program.

Eligibility for National Certification

While UNH students who complete the clinical internship component of the BMS:MLS General Curriculum are well prepared for the ASCP-BOC MLS Exam, successful completion of the program does not guarantee that the student will pass the certification exam. Students must dedicate themselves to extensive exam preparation in all areas prior to taking the certification exam.

For the generalist certification these areas are Blood Banking, Chemistry, Hematology, Immunology, Laboratory Operations, Microbiology, and Urinalysis. The Program Director will

inform the ASCP that you are eligible to sit for the certification exam when you have met the following criteria:

- Passed **all** internship courses with a C- or better
- Receive the equivalent of 70% or higher on all rotation performance assessments.
- Received a 70% average or better on all rotation exams and comprehensive exam.
- Completed any remedial work as assigned.

It is recommended that students take their certification exam within one month of the completion of their internship following extensive review in all the test areas.

Students who completed their BMS:MLS program degree without the clinical internships are **not** eligible for the ASCP-BOC MLS exam via Route 1.

Professional Associations

Students are encouraged to pursue extracurricular activities in the MLS profession. There are several professional organizations that welcome student members, including:

- [American Society for Clinical Laboratory Science](#)
- [American Society for Clinical Pathology](#)

In addition to the membership offerings these organizations provide, they also support developing professionals through networking and volunteer activities that can be build your leadership portfolio and help secure you recommendations for jobs or future schooling.

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Program Policies Statement of Acknowledgement

Upon completion of reading the BMS:MLS Student handbook please complete this form and turn it in to your advisor.

Student Name: _____

Student ID number: _____ Year of UNH Admission: _____

Wildcat E-mail Address: _____

Please initial each statement below:

_____ I have read and agree to all the policies outlined in the BMS:MLS Student Handbook.

_____ I understand the failure to abide by University or program policies could result in disciplinary action.

_____ I understand it is my responsibility to remain informed on current BMS:MLS policies.

_____ I have had the opportunity to ask questions about policies outlined in this handbook and was given clear answers.

_____ I understand the requirements for pursuing a clinical internship.

_____ I understand the policies related to clinical capacity, placement, and adhering to affiliate policies as listed in this document.

_____ I understand that a clinical internship is an unpaid learning experience.

_____ I understand that **only** those students who complete the clinical internship are eligible to sit for the ASCP-BOC MLS Exam via Route 1.

_____ I understand that graduation is not contingent upon taking any external, national exams.

_____ I understand that this campus handbook is secondary to any University or Department policies. In the case of conflict between policies, the University and/or Department policies are considered correct and will be adhered to.

Student Signature: _____

Date: _____

