Medical Laboratory Science
Masters of Science Degree

Graduate Handbook

University of North Dakota
Department of Medical Laboratory Science
School of Medicine & Health Sciences
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http://www.med.und.edu/medical-laboratory-science/
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## FACULTY AND STAFF

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INTRODUCTION

The faculty and staff would like to welcome you to the Master of Science (MS) Program in Medical Laboratory Science (MLS) at the University of North Dakota!

The Department of Medical Laboratory Science (MLS) offers a graduate program leading to the Master of Science (MS) Degree in MLS, non-thesis option. The course of study enhances the student's knowledge and skills in several major areas of MLS. The curriculum is designed to prepare students for positions as laboratory administrators, clinical laboratory consultants, technical supervisors, laboratory educators, and/or leaders in the profession. The MS in MLS degree at UND is designed to accommodate working laboratory professionals, with online coursework and only two four-day on-campus residency requirements.

The MS in MLS curriculum requires a minimum of 33 graduate-level semester credits, with courses separated into three categories: Foundations Courses, Core Courses, and Elective Course. The 12 required credits of Foundations Courses focus on fundamentals of advanced-level practice in the field of MLS including technical concepts, communication skills, and project development. Core Courses address the scientific content/theory related to the major testing areas in the medical laboratory. At least four Core Courses (12 credits) are required for degree completion, ensuring a rigorous and diverse course schedule that upholds the program's commitment to a generalist emphasis. Lastly, elective courses related to specialty areas—education, leadership, management, etc.—are available for students to customize their degree to fit individual needs. Common to all courses will be an emphasis on scholarly investigation, communication, and developing content expertise. The curriculum requires two separate four-day residency requirements as follows:

1.) MLS 524 (Current Trends/Issues for the Lab Professional): Mon-Thu first full week in October

2.) MLS 515 (Capstone in MLS): Tue-Fri the week of UND spring commencement in May

The purpose of the MS MLS handbook is to provide you with general information concerning the MLS graduate program at The University of North Dakota. We encourage you to read through this information to better acquaint yourself with curriculum and policies of the program. We will discuss the basic process of earning your graduate program degree in this handbook, along with specific program policies and procedures.

Please review the UND Graduate School Handbook http://graduateschool.und.edu/graduate-students/current/spring2015mastersstudenthandbook.pdf for graduate school policies and procedures and other important information. The graduate school website is: http://graduateschool.und.edu/. This website should be used to locate graduate school forms and procedures related to your official progress throughout the degree.

MISSION STATEMENTS

The mission of the Department of Medical Laboratory Science is to educate laboratory professionals to meet the healthcare needs of the state, region, and the nation. The department is dedicated to providing students with the knowledge and skills necessary to succeed as practicing professionals.

The mission of the Master of Science Medical Laboratory Science (MS, MLS) program at the University of North Dakota is to generate and disseminate an advanced scholarly curriculum through distance and on-campus courses to baccalaureate degreed, certified clinical laboratory science/medical laboratory science professionals throughout the state, nation and world. The curriculum is designed to prepare graduates for leadership roles in education, consulting, and healthcare administration.
MS in MLS PROGRAM GOALS

Learning Goal 1:
Students will understand the role of the clinical laboratory in producing positive patient outcomes, and be able to communicate that role within a team of healthcare professionals.

Objective 1.1 Recognize how the laboratory is involved with the diagnosis and management of common health issues
Objective 1.2 Relate and apply advanced laboratory knowledge to the evolving practice of medical laboratory science
Objective 1.3 Devise techniques to disseminate laboratory-related information to healthcare professionals

Learning Goal 2:
Students will be prepared to identify, critically assess, and/or problem solve issues related to professional practice in the field.

Objective 2.1 Detect and examine issues and/or trends related to the profession
Objective 2.2 Research issues and/or trends related to the profession utilizing scholarly methods and references
Objective 2.3 Propose potential solutions for issues and/or trends in the profession
Objective 2.4 Predict ramifications of potential solutions for issues and/or trends in the profession

Learning Goal 3:
Students will demonstrate knowledge of an advanced scholarly curriculum that encompasses the scope of practice in medical laboratory science.

Objective 3.1 Review theory related to practice in the medical laboratory
Objective 3.2 Develop expanded knowledge of theory related to practice in the medical laboratory
Objective 3.3 Examine current testing methodologies and practices in the medical laboratory
Objective 3.4 Utilize theoretical knowledge to investigate and/or troubleshoot realistic scenarios

Learning Goal 4:
Students will strengthen professional communication skills to be utilized across multiple topics or disciplines.

Objective 4.1 Synthesize advanced-level documents, presentations, and/or dialogue
Objective 4.2 Utilize scholarly references that have been assessed for quality to support communication
Objective 4.3 Display appropriate communication with fellow students, faculty, and healthcare professionals
ADMISSION

Follow the General Graduate School Admissions Requirements:  http://graduateschool.und.edu/graduate-students/new/admissions-domestic.cfm

The Graduate Records Exam is not required for entrance into the Medical Laboratory Science Program.

Applicants who are seeking admission to Graduate School must meet all of the minimum general graduate school admission requirements identified in the links above.

In addition, the prospective students must fulfill the requirements for admission to the graduate program in Medical Laboratory Science (MLS).
1. B.A. or B.S. degree and successful completion of the CLS (NCA), MT(ASCP) or MLS(ASCP) certification examinations. (Include proof of certificate with graduate school application.)
2. Curriculum grade point average (GPA) of at least 3.0 based on the junior and senior years of undergraduate work (based on A=4.0).
3. Satisfy the Graduate School’s English Language Proficiency requirements as published in the Graduate Catalog:  http://und.edu/academics/registrar/catalog-current.cfm
4. Prior experience in a medical laboratory is highly recommended.

PROGRAM REQUIREMENTS

Non-Thesis Option:
The Master of Science in Medical Laboratory Science is considered a non-thesis option graduate program. Advanced scholarly work will include the independent study and the comprehensive exams.

Course Requirements:
MS in MLS students must complete a minimum of 33 credits of degree coursework specifically including 12 credits of Foundation Courses, 12 credits of Core Courses, and at least 9 credits of Elective courses. The student may choose to pursue a minor or cognate in addition to the MS in MLS degree major; see the UND School of Graduate Studies website for specific details. Note that a minor/cognate is difficult to acquire unless the student is able to take courses on-campus at UND.

Transfer Requirements:

A limited amount of the graduate work completed at a regionally accredited North American institution prior to or after matriculation in the Graduate School at UND, may be applied toward a graduate degree at The University of North Dakota (NOTE: The amount of transfer credit that can be accepted toward the MS in MLS degree is 8 semester credits—one-fourth of the total credits hours required for the degree). Graduate work is considered for transfer only on an individual basis and only after the student has completed satisfactory work in residence at UND. Those transfer credits, approved by the student’s advisor and the Dean of the Grade School, are included in the program of study for the UND graduate degree and only those transfer credits will be recorded on the UND transcript.

The basic purpose of the transfer policies is to ensure that transferred work is of comparable content, level, timelines, and quality to that which would be taken at UND and included on the program of study for the degree. The following policies are generally applicable to the acceptance of the graduate work for transfer to UND:

■ The work must have been taken at an accredited North American institution.
■ The student must have been enrolled as a graduate student.
■ The work must have received graduate credit at the institution where it was earned.
■ The student must have earned a grade of B or better.
■ The work must be less than seven years old at the time the UND degree is awarded with the exception of work that was part of a completed prerequisite degree.
GRADUATE TEACHING ASSISTANTSHIPS

Graduate Teaching Assistantships (GTA) are university appointments that provide financial assistance to students qualified for teaching service in the department in which they take the major part of their graduate work. The purpose of these assistantships is to facilitate students working toward their degree while gaining teaching experience in the field of the degree. Appointments may be for one-fourth or one-half of service. Most assistantships are half-time assistantships which require 15 to 20 hour of work per week and permit the student to carry a minimum of six and a maximum of ten credits of graduate work each semester. A quarter-time assistant requires seven and a half to ten hours per week and must carry eight to 12 credits per semester. The tuition is waived by the University. Students are responsible for all other fees. A health insurance plan is available.

International graduate assistants who are non-native English speaking individuals are required to take the TSE (Test of Spoken English) or the SPEAK test and achieve a score of 50 before an assistantship may be offered. If a graduate assistant has taken the internet-based TOEFL (IBT), ask the Graduate School what score is required.

To inquire about graduate teaching assistantships within the MLS program contact Ruth Paur, ruth.paur@med.und.edu. Limited positions are available.

ADVISOR APPOINTMENT

Upon acceptance into the program the student will be assigned an advisor by the MS MLS program director. The student will be able to view their advisor's information on the graduate school online system, and the UND campus connection system. This information will include the advisor's name, email address and telephone number. It is recommended that the student contact his/her advisor soon after being accepted to the program.

STUDENT AND FACULTY RESPONSIBILITY

Student Responsibility: it is the responsibility of the student to become informed and to observe all regulations, procedures and deadlines required by the University, the Graduate Catalog, and the program the student is pursuing. Faculty are available for advisement, but the student must initiate all steps of the processing of documents by the published deadline. Deadlines are published in the time schedule of classes and the UND academic catalog. Ignorance of a rule does not constitute a basis for waiving that rule. The student is responsible for ascertaining his or her academic standing and grade-point average. All graduate students must maintain a 3.00 GPA. While the School of Graduate Studies attempts to notify students regarding any problems in the student's progress toward a degree, the student alone is responsible for maintaining satisfactory academic standing and progress.

Faculty Responsibility: it is the responsibility of the faculty to respond to student inquiries in a timely manner. A response to student communication should be made within 5 business days of the initial inquiry. It is highly recommended that a student make a second inquiry if a response has not been received within 5 business days (in the event the original message was not received). Contact MaryBeth McGurran (mary.mcgurran@med.und.edu; 701-777-2634) if a response is not received after the second attempt.
GETTING STARTED IN THE MS in MLS PROGRAM

1. **Admission:** Upon admission to the University of North Dakota and acceptance into the program, you will be eligible to enroll (register) in coursework within the UND MLS graduate program. At the time of application to the UND graduate program through the Graduate School you will be notified of your EMPL ID# (sometimes called Student ID#). The EMPL ID# serves as your unique identification number. Keep this number handy as you will need it often while enrolled as a graduate student and it must be listed on all forms submitted to the graduate school and it is used for course registration.

2. **Advisor:** Upon acceptance into the program the student will be assigned an advisor by the MS MLS program director. You will be able to view your advisor’s information on the graduate school online system and this information will include the advisor’s name, email address and telephone number. It is recommended that the student contact his/her advisor soon after being accepted to the program.

3. **UND E-Mail:** Upon admission to UND you will be issued a UND my.und.edu e-mail account. The e-mail account will remain active while you are enrolled as a student at UND. To access this account go to [http://und.edu/current-students.cfm](http://und.edu/current-students.cfm). You will want to check this email often for official UND and MLS program correspondence. This is the only email account we will use to contact you so please check it often and use it to contact us.

4. **Semester Course Offerings/Course Registration:** Prior to the start of the fall and spring semesters, the semester course offerings with brief descriptions and instructions will be posted on the MLS website and/or in the MS in MLS Graduate Community Site in Blackboard. This announcement serves to inform you of upcoming semester offerings and registration information needed, textbook requirements, etc. The announcement will be available by August 1 for Fall Semester, and by December 1 for Spring Semester. Any questions concerning registration should be directed to the MLS administrative assistant, Mary Beth at marybeth.mcgrurran@med.und.edu.

5. **Course Registration:** To register for course work you will need to access the university online enrollment system (Connect ND/Campus Connection [http://und.edu/academics/registrar/campus-connection.cfm](http://und.edu/academics/registrar/campus-connection.cfm)). The system is used for enrollment and also individual student status. Additional directions for accessing Campus Connection are available on the UND website. Campus connection is also to be utilized for viewing final semester grades. Use the information in #4 above each semester to register on campus connection for your courses. A “tip sheet” for campus connection utilization can be found at: [http://und.edu/academics/registrar/cc-tip-sheets-faculty-staff.cfm](http://und.edu/academics/registrar/cc-tip-sheets-faculty-staff.cfm)

6. **Blackboard:** The platform used for the online course classroom is through the system “Blackboard”. In order to activate your Blackboard username and password you must activate your UND email account. Once activated your username and password are the same as your UND issued email. If you experience difficulty accessing Blackboard, contact the UND helpdesk.

7. **MS in MLS Graduate Community:** Under the ‘Community’ tab in Blackboard you will find the “MS in MLS Graduate Community” site. Important announcements regarding deadlines, curriculum, registration, reminders, graduation, etc. will be posted through this site, so check it often. Course registration information and information modules will also be posted on this site. Contact Brooke Solberg ([brooke.solberg@med.und.edu](mailto:brooke.solberg@med.und.edu)) if you do not have access to this community site.

8. **Final Semester Grades:** Official final semester grades should always be viewed on the UND Campus Connection system and not on Blackboard (grades in Blackboard are unofficial).

9. **Computer Requirements:** The majority of the curriculum in the graduate program is delivered in an online format. The MLS program does not require students to purchase a personal or laptop computer while enrolled in the program. Since this program is delivered in an online format, you will need to have the means to readily access course materials via the internet learning systems. All questions on this topic should be directed to Janna Schill, [janna.schill@med.und.edu](mailto:janna.schill@med.und.edu).
SEQUENCE FOR COMPLETION OF MASTER’S DEGREE (Non-Thesis Option)

Admission

Advisor Assignment (Assigned by MLS Program Director)

Submit Program of Study

Submit Topic Proposal/Independent Study

Advancement to Candidacy

Apply to Graduate

Graduate School Checks Student’s Record

Submit Final Copy of Independent Study to Advisor

Comprehensive Exams
(Comprehensive Exams will occur in 2 separate semesters; the first exam will occur earlier in the process)
CHECKLIST

This is designed as a tool for you to follow your progress within the MS MLS program.

- **Apply for admission** to the UND Graduate School as a MS in MLS degree seeking student.
- **Advisor:** Upon program acceptance, you will be assigned an advisor by the program's director.
- **Review course offering information** “Rotation Schedule” from the MLS website and/or MS in MLS Graduate Community site in Blackboard.
- **Register** for semester courses by first viewing “Schedule of Graduate Classes” on the MLS website and/or MS in MLS Graduate Community site. The information listed will include the class # used to register for your courses, instructor, textbook(s) required, when courses begin on Blackboard, etc. Course registration occurs utilizing the campus connection system: [http://und.edu/academics/registrar/campus-connection.cfm](http://und.edu/academics/registrar/campus-connection.cfm). This link serves as a “tip sheet” for additional assistance [http://und.edu/academics/registrar/cc-tip-sheets-faculty-staff.cfm](http://und.edu/academics/registrar/cc-tip-sheets-faculty-staff.cfm)
- **Complete the MLS program advising sheet** at the end of this handbook. This is created by the MLS program to allow you to make a tentative plan of your program of study and the projected semesters you are intending to enroll in specific courses. You will need to view the MLS rotation schedule to help in your planning. It is for your purpose only and does not need to be submitted. Or, you can use the official program of study form from the Graduate School for this purpose. Note: No official coursework is completed during the summer semester but feel free to visit with your advisor concerning preparation for MLS 997 Independent Study during summer.
- **Submit your program of study** (recommended: second semester) to your advisor. Additional information on program of study can be found in this handbook and in the graduate school handbook at the graduate school website. **Note:** Your program of study must be approved at least one semester before you are advanced to candidacy.
- **Submit a Topic Proposal** for MLS 997 (Independent Project) no later than the semester before you plan to graduate. Your proposal must be approved by your advisor and the Dean of The Graduate School before you can become a candidate for your degree. You cannot graduate in the same semester in which you become a candidate and therefore you must receive approval on your proposal prior to your final semester. Also, you cannot register for MLS 997 until your proposal has been approved. Discuss ideas with your advisor before completing the topic proposal form. IRB forms may also be required, depending on the nature of your project. Submit the form to your advisor. See more specific information under Independent Study included in this handbook or review this subject in the Graduate School handbook.
- **Advancement to Candidacy:** You must be advanced to candidacy the semester before you plan to graduate. When you have received approval of your program of study and topic proposal, and you have completed at least 12 credits with a 3.0 GPA, you will be advanced to candidacy.
- **Apply to Graduate:** You must submit the form by the published deadline for the term in which you plan to graduate. This is an online form and you will be asked to log in to complete it. To complete the application for graduation visit [http://graduateschool.und.edu/graduate-students/current/forms.cfm](http://graduateschool.und.edu/graduate-students/current/forms.cfm). You must be advanced to candidacy at least one semester before the semester you want to graduate.
- **Complete Your Comprehensive Exams:** You will complete two comprehensive exams; one the semester before you intend to graduate, and the second the semester you intend to graduate. Reminders will be sent out each semester concerning how/when you need to sign up for comprehensive exams. See the Comprehensive Exam section in this handbook for more info.
- **Submit the final copy of your Independent Study** (MLS 997) to your advisor. Check with your advisor for the date they want to receive it so that he/she will have sufficient time to read/grade before the Final Report on Candidate form is required to be submitted to the Graduate School.
- **“Final Report on Candidate”** form is submitted to the Graduate School by the published deadline for the term in which you plan to graduate. This will be done by your advisor.
HELPFUL HINTS

- Always, Always, Always include your UND Student ID# (sometimes called EMPL ID#) on all forms where it is required.

- Be sure to monitor your UND my.und.edu e-mail account on a weekly basis throughout the degree seeking process. The UND email account assigned to you will be the form of electronic communication used to contact you by the University, MLS faculty and staff.

- Always update your personal information on UND campus connection (address change, etc). Campus Connection is the official UND connection used to locate you.

- The graduate school requires a student to be registered in a course the semester they have applied for graduation. If you have completed all of your course requirements in previous semesters you would register for MLS 996 Continuing Enrollment. There is a $100 course fee MLS 996 Continuing Enrollment which would be the tuition charged for that semester. Plan your program of study so that you have a course left to register for your last semester. An example would be that you would register for MLS 997 Independent Study the semester you are graduating.

- Schedule an in-person advisement session with your advisor when you are on campus for either of the two on campus courses (MLS 524 or MLS 515). The student might wish to use the form on page 34 to plan for their advisement session. It is helpful for the student to bring this form with them to the advisement session. This will also help the student to complete their program of study form, if they have not done so already.

- Always remember to view your official semester grades on the UND system Campus Connection. The grade entered on Campus Connection will be the official grade placed on your official UND transcript. The Blackboard program is used to teach and administer the course online and is not the place to view your FINAL official semester grade.

- Graduate School forms are located on the graduate school website: http://www.und.edu/dept/grad/html/forms.html

- The official Graduate School Handbook is available online: http://graduateschool.und.edu/graduate-students/current/handbooks-and-guides.cfm

- Graduate School website: http://www.und.edu/dept/grad/

- Campus connection “tip sheet”: http://und.edu/academics/registrar/cc-tip-sheets-faculty-staff.cfm

- Office of the Registrar A-Z index: http://und.edu/academics/registrar/registrar-a-to-z.cfm

MS in MLS students must complete a minimum of 33 credits of degree coursework specifically including: **12 credits of Foundations Courses, 12 credits Core Courses, and at least 9 credits of Elective Courses.**

### Foundations Courses = All Listed Courses Required (12 Credits)

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<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MLS 501</td>
<td>Advanced Laboratory Practice: Technical Concepts</td>
<td>3</td>
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<tr>
<td>MLS 515</td>
<td>Capstone in Medical Laboratory Science*</td>
<td>2</td>
</tr>
<tr>
<td>MLS 524</td>
<td>Current Trends and issues for the Laboratory Professional**</td>
<td>2</td>
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<tr>
<td>MLS 525</td>
<td>Professional Communication in the Medical Laboratory***</td>
<td>3</td>
</tr>
<tr>
<td>MLS 997</td>
<td>Independent Study</td>
<td>2</td>
</tr>
</tbody>
</table>

*Includes a 1-week on-campus residency requirement (T-F prior to spring commencement each May); to be completed during the last spring semester of coursework.

**Includes a 1-week on-campus residency requirement (M-Th the first full week in October each Fall); to be completed during the first fall semester of coursework.

***This course must be completed during your first semester of coursework.

### Core Courses = 4 Courses Required (minimum of 12 Credits)

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLS 502</td>
<td>Advanced Clinical Hematology: Erythrocytes*</td>
<td>3</td>
</tr>
<tr>
<td>MLS 503</td>
<td>Advanced Clinical Hematology: Leukocytes*</td>
<td>3</td>
</tr>
<tr>
<td>MLS 506</td>
<td>Advanced Clinical Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>MLS 507</td>
<td>Advanced Clinical Immunohematology</td>
<td>3</td>
</tr>
<tr>
<td>MLS 513</td>
<td>Advanced Clinical Immunology</td>
<td>3</td>
</tr>
<tr>
<td>MLS 518</td>
<td>Advanced Molecular Diagnostics</td>
<td>3</td>
</tr>
<tr>
<td>MLS 522</td>
<td>Advanced Clinical Bacteriology</td>
<td>3</td>
</tr>
</tbody>
</table>

*Only one of these courses can be counted as a Core Course (if both are taken, the second will be counted as an Elective Course

### Elective Courses †† = 3 Courses Required (minimum of 9 Credits)

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLS 505</td>
<td>Advanced Laboratory Practice: Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>MLS 508</td>
<td>Leadership for the Laboratory Professional</td>
<td>3</td>
</tr>
<tr>
<td>MLS 509</td>
<td>Medical Laboratory Education: Teaching Principles</td>
<td>3</td>
</tr>
<tr>
<td>MLS 516</td>
<td>Special Topics †††</td>
<td>1-4</td>
</tr>
<tr>
<td>MLS 517</td>
<td>Advanced Laboratory Practice: Administrative Concepts</td>
<td>3</td>
</tr>
<tr>
<td>MLS 523</td>
<td>Advanced Non-Bacterial Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>MLS 526</td>
<td>Advanced Clinical Hemostasis</td>
<td>3</td>
</tr>
<tr>
<td>MLS 527</td>
<td>Medical Laboratory Education: Assessment and Accreditation</td>
<td>3</td>
</tr>
<tr>
<td>MLS 591</td>
<td>Directed Studies in Laboratory Medicine (topic TBD)†††</td>
<td>1-4</td>
</tr>
<tr>
<td>MLS 591</td>
<td>Directed Studies in Laboratory Medicine: Project Development†††</td>
<td>1</td>
</tr>
</tbody>
</table>

†† Any Core Course taken beyond the required 12 credits can also be counted as an Elective Course

††† Requires advisor approval
MS in MLS COURSE ROTATION SCHEDULE

The Course Rotation Schedule is made available to MLS students each semester through the MS in MLS Community site in Blackboard. The rotation is a 3-year projected rotation, and is updated annually. The schedule is subject to change, and students will be notified accordingly.

COURSE DESCRIPTIONS

MLS 501 - Advanced Laboratory Practice: Technical Concepts (3 credits)
An examination of technical concepts and skills utilized to ensure quality in the medical laboratory. The course will focus on enhancing quality control analysis and method validation skills, and utilizing statistical tools to monitor and improve quality testing processes in the medical laboratory.

MLS 502 - Advanced Clinical Hematology: Erythrocytes (3 credits)
A comprehensive study of human erythrocytes. Included are discussions of normal erythrocyte structure, function, production, regulation, and the pathophysiology of related disorders. The role of current laboratory testing in the diagnosis of erythrocyte disorders will be emphasized.

MLS 503 - Advanced Clinical Hematology: Leukocytes (3 credits)
A comprehensive study of human leukocytes. Included are discussions of normal leukocyte structure, function, production, regulation, and the pathophysiology of related disorders. The role of current laboratory testing in the diagnosis of leukocyte disorders will be emphasized.

MLS 505 - Advanced Laboratory Practice: Financial Management (3 credits)
This course presents an overview of financial management in medical laboratories. Students examine several basic financial operation concepts, including how to evaluate productivity, manage salaries, and manage supply inventories for maximum cost containment. Students learn how to plan for capital expenditures, set laboratory fee rates, and create, implement, and evaluate a budget.

MLS 506 - Advanced Clinical Chemistry (3 credits)
An advanced study of the theories and principles of clinical chemistry. Correlation of laboratory results with associated disease pathophysiology will be emphasized.

MLS 507 - Advanced Clinical Immunohematology (3 credits)
A detailed study of human blood groups including laboratory aspects of blood banking with special reference to theoretical and clinical applications. Emphasis will be placed on antibody identification and advanced problem solving techniques.

MLS 508 - Leadership for the Laboratory Professional (3 credits)
This course will focus on developing leadership skills applicable to the medical laboratory profession.

MLS 509 - Medical Laboratory Education: Teaching Principles (3 credits)
Approaches to teaching in Medical Laboratory Science will be examined, with an emphasis on development of instructional and evaluative materials. Additional topics discussed will include learner diversity, classroom management techniques, and course assessment.

MLS 513 - Advanced Clinical Immunology (3 credits)
An in-depth investigation of immune system functions. Correlation of laboratory results with normal and disease states will be emphasized.

MLS 515 - Capstone in Medical Laboratory Science (2 credits)
This course is a summative experience that occurs in a face-to-face environment at the end of the degree process. Graduate-level Medical Laboratory Science students reflect upon and consider applications of degree coursework. Additionally, the future of the medical laboratory science profession will be discussed and career opportunities will be explored.
COURSE DESCRIPTIONS CONTINUED

**MLS 516 - Special Topics in Medical Laboratory Science (1-4 credits)**
Topical courses in laboratory medicine organized on a semester by semester basis.

**MLS 517 - Advanced Laboratory Practice: Administrative Concepts (3 credits)**
An examination of administrative concepts and skills utilized to ensure quality in the medical laboratory. The course will focus on advanced concepts related to medical laboratory accreditation, inspection, and federal regulations. An emphasis will be placed on the utilization of best practices to monitor and improve laboratory diagnostics.

**MLS 518 - Advanced Molecular Diagnostics (3 credits)**
An overview of specific molecular biology application in the medical laboratory including correlation of cell biology, DNA chemistry, genetics, and laboratory techniques in relation to diagnostic investigations.

**MLS 522 - Advanced Clinical Bacteriology (3 credits)**
An advanced study of the laboratory diagnosis of bacterial diseases and an in-depth exploration of antibacterial agents.

**MLS 523 - Advanced Non-Bacterial Microbiology (3 credits)**
An advanced study of the laboratory diagnosis of viral, fungal, and parasitic diseases and of associated antimicrobial agents.

**MLS 524 - Current Trends and Issues in Medical Laboratory Science (2 credits)**
This course is an introductory experience that occurs in a face-to-face environment at the beginning of the degree process. Through group discussion and presentations, Medical Laboratory Science graduate students will explore current trends and issues related to all aspects of the profession.

**MLS 525 - Professional Communication in the Medical Laboratory (3 credits)**
This course will focus on developing written and oral communication skills as a foundation for application within the medical laboratory profession. Students will learn how to identify, assess, and incorporate appropriate reference materials to prepare professional, scholarly papers and presentations.

**MLS 526 - Advanced Clinical Hemostasis (3 credits)**
A comprehensive study of the human hemostatic system. Normal function, disease pathophysiology, and the evolution of hemostasis in healthcare will be discussed. The laboratory’s role in the diagnosis and/or monitoring of bleeding and clotting disorders will be emphasized.

**MLS 527 - Medical Laboratory Education: Assessment and Accreditation (3 credits)**
This course will focus on assessment and accreditation specific to medical laboratory education programs. Topics will include examination of assessment at the classroom, program, and institutional levels, including how to create and implement an assessment plan. Medical laboratory education accreditation processes will also be examined, with an emphasis on the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) standards.

**MLS 591 - Directed Study in Laboratory Medicine (1-4 credits)**
Designed to meet the needs of individual student-focused studies in laboratory medicine.

**MLS 591 - Directed Study in Laboratory Medicine: Project Development (1 credit)**
With faculty/advisor consult, the student will identify a topic and develop a proposal for the Independent project completed in MLS 997. Initial scholarly investigation of the topic will occur, and general guidelines for project format and content will be established.

**MLS 997 - Independent Study (2 credits)**
The independent study is a culminating experience for Medical Laboratory Science graduate students. Utilizing skills and information acquired throughout the degree process, students will select, investigate, and present findings of a topic with significance to the major field of study.
POLICIES

These policies are in addition to the policies of UND and the UND School of Graduate Studies.

ASSIGNMENT DUPLICATION
Students cannot use similar material to satisfy more than one degree requirement. For example, a case study submitted for a course assignment cannot also be submitted for a Comprehensive Exam or a course assignment in a different course, even if revisions were made from the original submission. Evidence of assignment duplication will be reviewed by the UND MLS Professional & Academic Standards Committee, and may result in grading penalties and/or program dismissal.

Note: brief mentioning of something included in a previous assignment may be acceptable. For example, a sentence or two about a reference utilized in a previous assignment would not constitute assignment duplication.

RESIDENCY REQUIREMENT
The MS in MLS degree program requires students to participate face-to-face in two separate 4-day on-campus sessions. Live participation in these sessions is required for all MS in MLS degree students; the sessions cannot be waived and students will not be eligible for graduation until the sessions are completed. The on-campus sessions correspond with the following courses and occur at the listed times:

- MLS 524 Current Trends & Issues for the Lab Professional: Mon-Thur, first full week in October
  - Completed during the student’s first Fall Semester of coursework
- MLS 515 Capstone in MLS: Tues-Fri, the last full week of the UND Spring Semester
  - Completed during the Spring Semester closest to the student’s graduation

REFERENCING & FORMATTING REQUIREMENTS
For continuity, assignments for the MS in MLS degree program should be formatted according to the specific guidelines discussed in MLS 525 - Professional Communication for the Medical Laboratory (unless otherwise directed by a course instructor). Every student must take MLS 525 during his/her first semester of coursework, and therefore be familiar with these requirements for all coursework.

Similarly, all coursework for the MS in MLS degree program should utilize the referencing guidelines discussed in MLS 525 (unless otherwise directed by a course instructor).

Formatting and referencing guidelines are also posted in the MS in MLS Graduate Community so that students can have access to the information after completing MLS 525.

COURSE SCHEDULING REQUIREMENTS
The following MS in MLS degree courses have scheduling/sequencing requirements as listed below:

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLS 525</td>
<td>Professional Communication in the Medical Lab</td>
<td>Taken in the 1st semester of coursework</td>
</tr>
<tr>
<td>MLS 524</td>
<td>Current Trends &amp; Issues for the Lab Professional</td>
<td>Taken in the 1st Fall Semester of coursework</td>
</tr>
<tr>
<td>MLS 515</td>
<td>Capstone in MLS</td>
<td>Taken the Spring Semester closest to graduation</td>
</tr>
</tbody>
</table>
LEAVE OF ABSENCE AND READMISSION

Degree seeking graduate students who wish to take a leave of absence from their program of study must notify their graduate program and the graduate school by submission of a “request for leave of absence from graduate study” before they plan to leave. Students will be required to obtain department approval prior to submitting the form to the graduate school. Complete this form: http://graduateschool.und.edu/_files/docs/readmission-loa.pdf and fax (701.777.2404) it to the MLS program. The MLS program will gather the necessary signatures of the program director, etc and forward it on to the graduate school for the student. It is much easier and less costly to request the leave of absence so keep this process in mind if you need to take a leave.

Students who do not submit a leave of absence will be required to submit a “readmission application for the graduate school” form: http://graduateschool.und.edu/_files/docs/readmission-loa.pdf and pay a readmission application fee of $35.00. Applications for readmission will be reviewed and approved by the program and the graduate school dean. If you need to process this form fax (701.777.2404) it to the MLS program first for the director’s signature and the MLS program will forward it on to the graduate school for the student.

INCOMPLETE GRADE POLICY (UND Office of the Registrar Policy)

http://und.edu/academics/registrar/_files/docs/catalogs/catalog-2011-2013.pdf#44 see page 44.

It is expected that students will complete all requirements for a course during the time frame of the course. For reasons beyond a student's control, and upon request by the student or on behalf of the student, an incomplete grade may be assigned by the instructor when there is reasonable certainty the student will successfully complete the course without retaking it. The mark “I,” Incomplete, shall be assigned only to the student who has been in attendance and has done satisfactory work up to a time within four weeks of the close of the semester, including the examination period, and whose work is incomplete for reasons satisfactory to his or her instructor. Incomplete grades are entered on the final grade sheet. Incomplete grades convert to grades of “F” if a grade change is not submitted by the instructor to the Office of the Registrar by the specific due date.

Option 1: The final grade must be submitted by the instructor within two calendar months of the original course completion date or by an earlier date specified on the incomplete form by the instructor. (Example: If original course took place in the spring or summer semester, the incomplete is due two calendar months into the following fall semester.)

Option 2: An incomplete may be extended for up to twelve calendar months by submitting a petition to the Office of the Registrar. This petition requires approval by the instructor of the course and the Dean of the Graduate School before it is submitted.

An incomplete grade must be changed by twelve calendar months from the ending date of the class. An “I” may be converted as indicated above but cannot be expunged from the record. Students may not register in courses in which they currently hold grades of incomplete, except for courses that allow repeated enrollment. A student will not be allowed to graduate with an unconverted incomplete grade on the academic record.

Note: It is the student’s responsibility to keep the instructor informed of his/her progress concerning an incomplete grade so it can be removed and a grade assigned by the instructor according to the above policy deadlines. If this does not occur the grade will automatically convert to a grade of F by the Office of the Registrar. It is the responsibility of the student to be knowledgeable about the status of the incomplete grade and to complete the specified work required to remove it by the specified deadline.
MS IN MLS GRADUATE COMMUNITY

The MS in MLS Graduate Community is a site in Blackboard that contains helpful resources, information, and announcements for students in the MS in MLS program at UND. All active UND MS in MLS students should have access to the site, which can be found in the “Community” area of Blackboard. Contact Brooke Solberg (brooke.solberg@med.und.edu) if you do not have access to this site by the first day of classes in the program.

Important announcements related to the program will be posted and emailed through this site, so it is important that you check the email address you have listed for Blackboard regularly. Here is a list of some of the resources available through this site:

- A list of the required curriculum
- Formatting and reference information for MS in MLS course assignments
- On-Campus Session Information
- Faculty Contact Information
- Course Registration Information
- Helpful Links
- Job Announcements (sent to us by current or past students)
- Information modules on the following topics:
  - Comprehensive Exams
  - Independent Study
  - Course Registration
  - Course Scheduling
  - Program of Study
  - What to do after being accepted to the program

PROGRAM OF STUDY

Your program of study is a listing of the courses and credits you need to take in order to meet the requirements of your degree. In the main graduate school handbook it states that the program of study should be completed in the second semester of coursework. It is the student’s responsibility to know what the course and credit requirements are for your program (see the curriculum requirements in this manual). Consult with your advisor when preparing your program of study.

Instructions: http://graduateschool.und.edu/_files/docs/pos-instructions.pdf
Form: (must be word processed) http://graduateschool.und.edu/_files/docs/masters-pos-4-11.pdf

Change to Program of Study:
This form is required if you change something in your previously approved program of study.

Signatures:
For any of the above forms your advisor and the graduate program director must sign your program of study or any changes you make to it. If you are not on campus you may fax the form to the MLS office (701-777-2404) and we will gather the signatures and forward the designated form to the graduate school on your behalf.
TOPIC PROPOSAL / Independent Study (MLS 997)

TOPIC PROPOSAL: The Independent study is designed to require the student independently to investigate a topic related to the major field of study. The study need not be an original contribution to knowledge but may be a presentation, analysis, and discussion of information and ideas already in the literature of the field. The requirement is to ensure a student can investigate a topic and organize a scholarly report on the investigation.

Approval is affected by the student’s completion of a form entitled, “Topic Proposal of Independent Study.” This form is available, with instructions, on the Graduate School website. Students must consult their advisor prior to completing the form, and the final form must be submitted to the advisor for approval. Upon approval by the advisor, the MLS program will forward the form to the Dean of the graduate school in order to secure the Dean’s approval. Upon approval the student is eligible to register in MLS 997.

YOU CANNOT REGISTER FOR MLS 997 UNTIL YOUR TOPIC PROPOSAL IS APPROVED. Your proposal of a topic for an independent study must be approved by your advisor and the Dean of The Graduate School before you can become a candidate for your degree. You cannot graduate in the same semester or summer session in which you become a candidate and therefore you must receive approval on your proposal prior to your final semester. The Graduate school will send notification of approval to the student, advisor and department.

Types of Projects: The student must discuss their ideas with their advisor, who will assist them in judging whether the project must be narrowed or expanded in scope to reflect the scholarly level demanded of an independent project. The advisor will work with the student for any scheduled reviews during the process of creating the project. An advisor may ask for assistance from another UND graduate instructor for expertise with a particular topic in the laboratory. Here are some examples of past projects:

- Creating an entire college course, including syllabus, objectives, lectures, quizzes, and exams, etc.
- Creating an emergency medical response system for a county.
- Creating 20 lab experiences for students in college laboratory training including: lists of equipment, supplies needed, and student worksheets, set-up information needed for the instructors for each lab.
- Creating a minimum of a 35 page single space paper, with at least 35 peer reviewed journals for the references on a topic related to lab medicine (research paper).
- Validation of an analyzer, test procedure etc with all supporting data, graphs and written description of the process.
- Two weeks in a research lab with a 35 page paper describing the research and information learned.
- Twenty training modules for students in a lab experience completing performance competency testing at a clinical site.

GRADING: The different types of projects will lead to different types of grading criteria which will be established between you and your advisor prior to project submission. If your advisor does not feel that the independent project submission merits at least a grade of C, the advisor will submit the project to the MLS Graduate Faculty Committee for review and recommendations for the student. The advisor will then forward these recommendations to the student and graduation will be delayed until a suitable submission for an independent project has been determined.

Human Subject Involvement:
If the student will be involving any human subjects in the independent project, including surveys or laboratory material, it is advised that the student reads the information concerning human subjects located within the Graduate School handbook. If human subjects are involved, paperwork must be submitted and approved by the Institutional Review Board at the University of North Dakota BEFORE the project proposal form can be forwarded to the Graduate School and before the project begins. The IRB approval process frequently takes at least four weeks, even with an expedited form. More info can be found at: http://und.edu/research/research-economic-development/institutional-review-board/forms.cfm

Additional Information:
COMPREHENSIVE EXAM INFORMATION

At the University of North Dakota, a non-thesis Master's degree requires successful completion of both the Independent Study and Comprehensive Exams. The MS in MLS degree program is non-thesis, and thus comprehensive exams are a required component. Comprehensive exam completion is in addition to course requirements; students will not register or pay tuition for comprehensive exams, nor will comprehensive exam information be posted on degree transcripts.

Comprehensive exams will be in a take-home format where no proctor is needed. At least 17 degree credits (including MLS 525) must be completed successfully prior to exam commencement, but no other specific courses are required prior to beginning the exams. Directions, specific exam requirements, and exam submissions will be available through Blackboard. Students will be required to complete two comprehensive exams in separate semesters as follows:

1. **A multidisciplinary scientific case study**
   - To be completed the semester before the student intends to graduate
   - A roughly 15-20 page (double-spaced) case study focused on lab-related pathophysiology and case-related laboratory applications; requires 20 references

2. **A professional problem solving case study**
   - To be completed the semester in which the student intends to graduate
   - A roughly 10-20 page (double-spaced) response focused on critical thinking, problem solving, and leadership related to an issue in the profession; requires 10 references

Because the MS in MLS degree is non-thesis, comprehensive exams are one of the major ways that student learning and growth are evaluated. The exams are not intended to be punitive, but rather a platform from which to showcase advanced, professional thinking. Exams will be designed to require advanced, scholarly work that is unique to each student and his/her experiences in the program and field. It is expected that exam responses will be original works; not the work of others or previous work from the student.

Comprehensive exams will be evaluated on a Pass/Fail basis, according to an established rubric developed to reflect the advanced-level degree curriculum. The student must pass both comprehensive exams to be eligible for MS in MLS degree completion. In the event of a failing score, a student will have one attempt to re-write a response for each exam. Re-writes must be completed within the semester in which the exam was started. Specific re-write guidelines will be given to the student on an individual basis, based on deficient rubric criteria. If a student does not pass the exam re-write, the case will be reviewed by the Department of MLS Professional & Academic Standards Committee, and may result in program dismissal. Similarly, any evidence of plagiarism, or submission of previous coursework will be reviewed by the Department of MLS Professional & Academic Standards Committee, and may result in program dismissal.

The timeline for submitting, reviewing feedback, and potentially re-writing exams is as follows:

<table>
<thead>
<tr>
<th>SEMESTER of EXAM</th>
<th>DATE EXAM IS AVAILABLE</th>
<th>DATE EXAM IS DUE</th>
<th>INSTRUCTOR FEEDBACK GIVEN BY</th>
<th>RE-WRITE DUE (If necessary)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring Semester</td>
<td>January 5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>February 5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>March 15&lt;sup&gt;th&lt;/sup&gt;</td>
<td>April 15&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Summer Semester</td>
<td>May 15&lt;sup&gt;th&lt;/sup&gt;</td>
<td>June 15&lt;sup&gt;th&lt;/sup&gt;</td>
<td>July 10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>August 1&lt;sup&gt;st&lt;/sup&gt;</td>
</tr>
<tr>
<td>Fall Semester</td>
<td>August 15&lt;sup&gt;th&lt;/sup&gt;</td>
<td>September 15&lt;sup&gt;th&lt;/sup&gt;</td>
<td>October 15&lt;sup&gt;th&lt;/sup&gt;</td>
<td>November 15&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Created 10/11-Updated 7/15, 4/17
CANDIDACY FOR THE DEGREE

Time Frame: No later than the semester before you plan to graduate.

There are a number of steps that must be fulfilled before a student can be advanced to candidacy. There is no separate form to complete to be advanced to candidacy but rather there are specific requirements that, when met, automatically advanced the student to candidacy.

Admission of a student to the Graduate School as a Degree Student in Approved Status implies only that the student has met the minimal entrance requirements and will be permitted to take graduate courses which normally will lead to a degree. The student has not been admitted as a candidate for a degree. Advancement to candidacy is a formal procedure and can be granted only after the student has met certain academic requirements. To become a candidate for Master of Science (non-thesis option), the following requirements must be met in approximately the following sequence:

1. Completion of the equivalent of one full-time semester (12 semester credits).
2. A GPA of at least 3.00 for all work attempted.
3. Appointment of Faculty Advisor:
   The advisor, who must be a member of the Graduate Faculty, will be appointed by the dean upon a written recommendation from the MLS graduate program director (Ruth Paur). The advisor is responsible to the program/department and to the Graduate School for the supervision of the student’s work.
4. Program of Study:
   Students must submit a Program of Study for Graduate School approval which will have been developed in consultation with the advisor and signed by the MLS graduate program director. If a minor is declared, the program must also be signed by the chairperson of the minor department. The Program of Study should be developed early in the second semester and submitted to the Graduate School through the MLS student’s advisor and program director.
5. Topic Proposal of Independent Study:
   Student must obtain approval of a topic for the independent study. The advisor approves the Topic Proposal of Independent Study, and the form is submitted to the Graduate School to become part of the record. The topic proposal must be filed prior to the semester or session in which the student expects to graduate.
6. Final Examinations:
   Those advanced to candidacy for non-thesis master’s degrees must pass written final comprehensive examinations which must cover the major field but may at the advisor’s discretion, draw upon or cover the supporting areas. Such examinations generally will be given and evaluated by the major department, but the results will be certified to the Graduate School by the advisor and the MLS graduate program director on the form Final Report on Candidate by the deadline specified in the Academic Calendar. The appropriate comprehensive examination(s) will be administered by the department no earlier than the semester proceeding the semester in which the candidate intends to graduate. Candidates should have at least 17 credits of degree coursework completed upon beginning comprehensive exams, and must be in satisfactory academic standing. The student cannot graduate without successful completion of comprehensive examinations.
APPLICATION FOR GRADUATION

A student MUST apply for graduation. After you have been advanced to candidacy the graduate school will contact you concerning the application for graduation. There is a deadline that must be met to complete this application (find at http://graduateschool.und.edu/dates-and-deadlines.cfm#sept). The specific date deadline changes each semester. It occurs in approximately the third week after each semester begins.

The application is available at: https://webdevelopment.und.edu/graduationonline/. This form requires the student to log on to complete it. It will be sent directly to the graduate school electronically when completed with a copy going to the student’s advisor automatically.

FINAL REPORT ON CANDIDATE

The final report must be submitted to the Graduate School by the published deadline in which the student plans to graduate. THE MLS PROGRAM WILL PROCESS THIS FINAL FORM REPORT ON THE STUDENT BY THE PUBLISHED DEADLINE. A delay in submitting comprehensive exams and/or the independent project to within four weeks of the date this form is due could delay the student’s graduation until the following semester.

By completing this final report the MLS graduate program director and your advisor are reporting to the Graduate School the results of your comprehensive examinations and confirming that your Independent Study Report has been completed by you, the student, and accepted by your advisor. After receiving this report the Graduate School will authorize your degree if all conditions have been met as required.

GRADUATE SCHOOL PETITIONS

In the case of a missed deadline, registration error, incomplete grade, etc., a student has the right to petition the Dean of the Graduate School in order to correct the problem.

http://graduateschool.und.edu/_files/docs/gs-petition-4-11.pdf

The student must state clearly what is being petitioned. If the petition involves a specific course, the course number must be listed. Each petition form lists the signature required for each action.

Following is a brief list of potential reasons to file a petition:

- Adding a course after the deadline
- Enrolling in more credits than allowed
- File for graduation after the deadline
- Enrolling in 996 Continuing Enrollment beyond the number of semesters allowed
- Repeating a course with a grade of C or better

Additional information on each of these requirements to file a petition can be found in the graduate school handbook located online at: http://graduateschool.und.edu/_files/docs/2011-masters-handbook.pdf

GRADUATE SCHOOL FORMS

Always use the current forms available for download on the Graduate School Website:

http://graduateschool.und.edu/graduate-students/current/forms.cfm
FREQUENTLY ASKED QUESTIONS (FAQ)

1. How do I register for a course?
To register for a course you need the class number. We do not publish our class numbers on the UND system. To view them go to our website and choose graduate program from the left hand side. There you will see a tab for our courses. At that tab you will find an announcement which will give you the class number to use to register for the course, the textbook info, instructor, what date the course will begin on blackboard, if a proctor is needed for the course, etc. The announcement will also be posted in the MS in MLS Graduate Community site. The announcement will be available by August 1 for fall semester and December 1 for spring semester. MLS courses are not offered during the summer semester. Additional information is included in this announcement that will be helpful to you for the semester. Using this information you would then proceed to the UND campus connection system and register for your courses. You would go directly to enroll and insert the class number. Hint: Do not go to search to locate the class number to choose it because it cannot be viewed – always go directly to enroll and put the class number in. The rotation schedule of courses (on our MLS website and in the MS in MLS Graduate Community) is a tool that will be helpful to you in planning your course registration.

2. I need signatures of my advisor, graduate program director, etc., on a required form. How can I obtain them since I am not on campus at this time?
If you would fax the form to the MLS office (701-777-2404), or email it to marybeth.mcgurran@med.und.edu, the MLS administrative assistant will gather the required signatures for you and forward the form on to its’ destination. You can also email the form to your advisor.

3. Do I need to be continually enrolled? What if I want to take a semester off?
No, you don’t need to be continually enrolled but you must complete a form http://graduateschool.und.edu/_files/docs/leave-of-absence-4-11.pdf in order to not register in a course for a semester (other than summer). See the section Leave of Absence and Readmission of this handbook for more information or view this section in the graduate school’s office handbook.

4. What do I enroll in if I have finished all my courses and the only thing left I have to do is officially graduate?
The Graduate School requires a student to be registered in a course the semester they have applied for graduation. If you have completed all of your course requirements in previous semesters you would register for MLS 996 Continuing Enrollment. There is a $100 course fee MLS 996 Continuing Enrollment which would be the tuition charged for that semester. Plan your program of study so that you have a course left to register for your last semester. An example would be that you would register for MLS 997 Independent Study the semester you are graduating.

5. Do I need to finish my independent project (MLS 997) in one semester?
No, it is the only course that can be continued beyond one semester without acquiring an incomplete grade. If not completed in the semester you registered for it you will receive a SP grade. The SP grade will be removed and a letter grade assigned when the project is complete.

6. How do I change my program of study?
After consulting with your advisor, complete the form “Changes to a Program of Study” which can be found online at the graduate school website under forms. Fax the form to the MLS office (701-777-2404), or email it to marybeth.mcgurran@med.und.edu or your advisor, who will gather the required signatures for you and forward the form on to its destination. Do not submit a new program of study unless there are major changes.
FREQUENTLY ASKED QUESTIONS (FAQ)

7. **What happens if I cannot complete a course on time?**
   
   *If you can’t complete a course on time because of something beyond your control, you may request to receive an incomplete grade. See incomplete section earlier in this handbook. Contact your instructor ASAP. Also see additional information in this handbook (Incomplete Policy).*

8. **What happens if my GPA falls below a 3.0?**
   
   *Your record will be reviewed at the graduate school level. Students having completed 12 credits or more will be placed on academic probation for one semester; students having accumulated fewer than 12 credit hours will be placed on academic probation until either a) the GPA is raised to at least 3.0 or (b) 12 credit hours are accumulated, whichever occurs first. If, at the end of the probationary period, the GPA is still less than 3.0, the student will be dismissed.*

9. **How do I drop a course after the deadline?**
   
   *You must complete an Administrative Procedures petition. This form can be found on the Graduate School or Office of the Registrar’s website under forms for students.*

   *http://und.edu/academics/registrar/forms.cfm  The form, with signatures and recommendations for approval or disapproval, must be received in the graduate school office for the graduate dean’s signatures. Explain clearly why you are requesting to drop after the deadline. The UND administrative procedures committee will meet on these petitions throughout the semester, and you will be notified by letter of their decision. (You may complete the form and fax it to the MLS program at 701-777-2404 and the MLS office will gather the necessary signatures and forward it to the graduate school for the Dean’s signature.)*

10. **How do I change my name?**
    
    *There is a form at this link: http://und.edu/academics/registrar/forms.cfm and this is the form: http://und.edu/academics/registrar/_files/docs/forms/name-change.pdf. Complete it and fax it to the UND registrar at 701-777-2969.*

11. **How do I apply to graduate?**
    
    *You need to be advanced to candidacy the semester before you graduate. See additional information in this handbook and/or view applying for graduation in the UND graduate handbook http://graduateschool.und.edu/graduate-students/current/handbooks-and-guides.cfm*

    *It is the student’s responsibility to apply for graduation by the deadline set by the UND Office of the Registrar. The application to graduate is found under student forms on the graduate school website: http://graduateschool.und.edu/graduate-students/current/forms.cfm*

12. **Is there a time limit on finishing my degree?**
    
    *Yes, graduate courses more than seven years old are considered obsolete and may not be counted to fulfill course requirement for an advanced degree program. Program of study more than seven years old are obsolete. Obsolete UND graduate courses may be revalidated and may be counted toward an advanced degree on the recommendation of the student’s faculty advisor and the dean of the graduate school. There is a form to complete to begin the revalidation process and the form is located at the graduate school website. http://graduateschool.und.edu/_files/docs/revalidation-4-11.pdf*

13. **I do not remember who was assigned as my advisor. How do I find out who it is?**
    
    *You would have received a “Student Status Sheet” from the graduate school when you were admitted which included your advisor information. You can also view your advisor information on UND Campus Connection using your student ID#. http://www.und.edu/dept/registrar/campusconnection/index.htm*
14. I am confused about the Independent Study process and what to do for a project. Are there any resources?
Yes! Read through the Topic Proposal/Independent Study information in this manual and in the UND Graduate manual. Also, visit the MS in MLS Graduate Community site in Blackboard and there is an audio module to listen to about the process. Additionally, there is a 1-credit course offered by the program that focuses on identifying a topic for MLS 997, writing and submitting a topic proposal, and developing and researching the topic. This course can be counted as an elective credit toward your degree total. The course is called MLS 591 – Directed Studies in Lab Medicine: Project Development. The course is offered every fall and spring semester. You are not eligible for the course if you already have a topic proposal that has been accepted by the graduate school, or if you have already taken and passed MLS 997.

15. Where do I view my official semester grades?
Your final official semester grades should always be viewed on the UND campus connection system. You should check it after each semester. The grade entered on Campus Connection will be the official grade placed on your official UND transcript. Blackboard is the program we use to teach and administer our courses online but is not the official site to view your final semester grades.

16. Are housing accommodations provided when I attend MLS 515 Capstone and 524 Current Trends and Issues for Laboratory Professionals?
No. Housing accommodations are the responsibility of the student. See the tab called On-Campus Info in the MS in MLS Graduate Community site in Blackboard for information about hotels that are close to campus.

17. Are there any “Tip Sheets” to help with the UND Campus Connection system?
http://und.edu/academics/registrar/cc-tip-sheets-faculty-staff.cfm

18. See “Helpful Hints” early in this handbook for additional helpful information.

If you think of any other FAQ that would be beneficial to post in this section please email them to the MLS administrative assistant, Mary Beth McGurran at marybeth.mcgurran@med.und.edu. We would be most happy to include them.
APPENDIX
Master of Science Medical Laboratory Science (MS MLS) Program
Transcript Review Worksheet/Advising Tool

This worksheet is a tool to aid in advising and understanding the requirements of the degree.

Required: A minimum of 33 credits of degree coursework specifically including: 12 credits of Foundation Courses, 12 credits of Core Courses and at least 9 credits of Elective Courses

Name: ____________________________________ UND Email __________________________________
ID# ____________________________________ Date Prepared ________________________________

Foundation Courses = All Listed Courses Are Required (12 Credits):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLS 501</td>
<td>Advanced Laboratory Practice: Technical Concepts</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 515*</td>
<td>Capstone in Medical Laboratory Science</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 524**</td>
<td>Current Trends and issues for the Laboratory Professional</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>MLS 525***</td>
<td>Professional Communication in the Medical Laboratory</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 997</td>
<td>Independent Study</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

*1 week on campus residency requirement and should be completed during last spring semester of coursework
**1 week on campus residency requirement and should be completed during first fall semester of coursework
***Must be completed during first semester of coursework

Core Courses = 4 Courses Required (Minimum of 12 Credits):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLS 502+</td>
<td>Advanced Clinical Hematology: Erythrocytes</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 503+</td>
<td>Advanced Clinical Hematology: Leukocytes</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 506</td>
<td>Advanced Clinical Chemistry</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 507</td>
<td>Advanced Clinical Immunohematology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 513</td>
<td>Advanced Clinical Immunology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 518</td>
<td>Advanced Molecular Diagnostics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 522</td>
<td>Advanced Clinical Bacteriology</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

*Only one of these courses can be counted as a Core Course (if both are taken, the second is counted as an Elective Course)

Elective Courses++ = 3 Courses Required (Minimum of 9 Credits):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLS 505</td>
<td>Advanced Laboratory Practice: Financial Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 508</td>
<td>Leadership for the laboratory Professional</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 509</td>
<td>Medical Laboratory Education: Teaching Principles</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 516+++</td>
<td>Special Topics</td>
<td>1-4</td>
<td></td>
</tr>
<tr>
<td>MLS 517</td>
<td>Advanced Laboratory Practice: Administrative Concepts</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 523</td>
<td>Advanced Non-Bacterial Microbiology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 526</td>
<td>Advanced Clinical Hemostasis</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 527</td>
<td>Medical Laboratory Education: Assessment and Accreditation</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MLS 591+++</td>
<td>Directed Studies</td>
<td>1-4</td>
<td></td>
</tr>
</tbody>
</table>

**Any Core Course taken beyond the required 12 credits can also be counted as an Elective Course
++Requires advisor approval

Total Credits must = at least 33

☐ Program of Study has been submitted (No later than second semester of coursework)

☐ Topic Proposal has been submitted (No later than the semester before expected graduation date)

When Program of Study and Topic Proposal have been approved student will be advanced to candidacy

☐ Discuss Comprehensive Exams (eligible to write exams when advanced to candidacy)

Estimated Graduation Date: ___________________________

Created 10/11-Updated 7/15, 4/17