

Inova Fairfax Hospital

School of Medical Laboratory Science



Student Handbook

Class of 2017 – 2018

EFFECTIVE DATE Aug. 14th, 2017

Table of Contents

I. GENERAL INFORMATION

INTRODUCTION	5
MISSION STATEMENT	5
STATEMENT OF PURPOSE.....	7
PROGRAM GOALS.....	7
THE LABORATORY	8
CONTACT INFORMATION	8
HOURS OF OPERATION.....	8
PERSONNEL	9

II. CURRICULUM AND REQUIREMENTS OF THE PROGRAM

CURRICULUM.....	10
COURSE DESCRIPTIONS	10
STUDENT PROJECT	11
EDUCATIONAL OBJECTIVES.....	11
SKILLS AND ABILITIES EXPECTED AT CAREER ENTRY	12

III. RESOURCES

LIBRARY AND LEARNING RESOURCES	13
CLINICAL RESOURCES.....	13
COMPUTER ACCESS.....	14

IV. STUDENT DISCLOSURE INFORMATION

TRANSFER CREDIT POLICY	15
GRADE POLICY	15
STUDENT EVALUATION OF THE PROGRAM	16
GRIEVANCE POLICY	17
PRIMARY APPEAL PROCEDURE	17
ADVANCED APPEAL PROCEDURE.....	17

V. PROBATION, DISMISSAL AND READMISSION

PROBATION	18
DISMISSAL POLICY	18
DISMISSAL DECISION.....	19
STUDENT WITHDRAWAL	19
STUDENT READMISSION	19

VI. STUDENT CONDUCT

STUDENT SUPERVISION.....	19
DRESS CODE POLICY.....	20
PERSONAL COMMUNICATION POLICY.....	21
STUDENT EMPLOYMENT/SERVICE WORK POLICY.....	21
DRUG/ALCOHOL/TOBACCO AND WEAPONS POLICY.....	21
HONOR AND ETHICS POLICY.....	22

VII. ATTENDANCE/LEAVE OF ABSENCE INFORMATION

HOURS.....	23
DOCUMENTATION OF ATTENDANCE.....	23
ABSENTEEISM/TARDINESS.....	24
EXCESSIVE TARDINESS.....	24
PERSONAL DAYS.....	24
STUDENT RESPONSIBILITIES.....	24
LEAVE OF ABSENCE.....	25
SCHOOL CALENDAR.....	25
INCLEMENT WEATHER.....	25

VIII. TUITION, FEES AND REFUNDS

TUITION.....	26
HOUSING.....	26
MEALS.....	26
TRANSPORTATION.....	26
TEXTBOOKS.....	26
REFUND POLICY.....	26
FINANCIAL AID.....	27

IX. SERVICES AVAILABLE TO STUDENTS

ACADEMIC/COURSE ADVISING.....	27
ACADEMIC SUPPORT SERVICES.....	27
PROFESSIONAL SOCIETIES.....	27
GUIDANCE AVAILABLE TO STUDENTS.....	28
EMPLOYMENT ASSISTANCE.....	28

X. STUDENT RECORDS

GRADUATION.....	28
STUDENT RECORDS.....	28
TRANSCRIPTS	28
RELEASING RECORDS FROM STUDENT FILES POLICY	29
REQUEST FOR DAY OFF FORM.....	30
LECTURE SCHEDULE.....	31
EVALUATION FORMS:	
LABORATORY INSTRUCTOR EVALUATION FORM	32
LABORATORY STUDENT EVALUATION FORM	35
LECTURE SERIES STUDENT EVALUATION FORM.....	37
SENIOR GRADE RECORD.....	39
STUDENT PROJECT GUIDELINES	40
STUDENT PROJECT OVERVIEW	41
STUDENT PROJECT: FORMAT GUIDELINES	42
STUDENT PROJECT: PROCESS DESCRIPTION	43

I. General Information

Inova Fairfax Hospital

Inova is a not-for-profit healthcare system based in Northern Virginia that serves more than two million people each year from throughout the Washington, DC, metro area and beyond. Governed by a volunteer board of community members, Inova has grown from one hospital in 1956 to a nationally recognized, comprehensive network of hospitals, outpatient services and facilities, primary and specialty care physician practices, and health and wellness initiatives.

Inova's five hospitals include more than 1,700 licensed beds and 16,000 employees. Inova encompasses the full array of health services, including the area's only Level 1 Trauma Center and Level IV neonatal intensive care unit. Inova is also home to nationally and internationally recognized Inova Heart and Vascular Institute (IHVI), Inova Translational Medicine Institute (ITMI) focused on genomics research, Inova Neuroscience Institute and Inova Children's Hospital.

Inova's Mission:

To improve the health of the diverse community it serves through excellence in patient care, education and research.

Inova's service promise:

Is that we seek every opportunity to meet the unique needs of each person we are privileged to serve – every time, every touch.

Our vision:

We seek to optimize the health and well-being of each individual we serve. We will achieve this by building the future of health with a focus on the following:

- We will reinvent hospital-based care to increase value for our patients
- We will look outside our hospitals to build an integrated network of providers and programs to support our community
- We will gain national and international recognition and funding - as well as an expanded patient base - through world-renowned specialty care and leading-edge corporate and consumer health programs

Our Commitment:

As a not-for-profit health system, our commitment is to meet the healthcare needs and improve the health of the communities we serve. We work in innovative ways to meet the healthcare challenges of today, while striving to meet the needs of the future.

Recognizing that research and innovation are vital elements to providing world-class patient care, Inova participates in a large number of cutting-edge clinical trials and research projects. Our diverse clinical activities make us a first-class location for scientific research.

Our commitment to ensure high-quality care is strengthened by our range of rigorous professional education programs to improve medical practice skills and patient outcomes. Inova's work extends beyond the walls of our hospitals and outpatient centers. We bring disease-prevention programs, health and exercise classes, and improved access to care for vulnerable children and adults directly to the community through our many outreach programs and partnerships.

At Inova, more than 16,000 employees demonstrate their commitment every day to providing the community with expert, world-class, compassionate patient care.

Inova Fairfax Hospital:

- Is fully accredited by The Joint Commission (TJC).
- Is licensed by the Commonwealth of Virginia's Department of Health and the Department of Mental Hygiene and Hospitals.
- Is approved by the American Medical Association's Council on Medical Education for an internship training program.
- Has approved programs in medical laboratory science, life support technology and respiratory therapy, and is engaged in nursing education as the principal clinical facility for both the Fairfax County.
- School of Practical Nursing and the professional nursing programs at Northern Virginia Community College and George Mason University.
- Has physician residency programs in cooperation with the Georgetown University School of Medicine, the George Washington University School, the Medical College of Virginia and the University of Virginia Medical School.

Medical Laboratory Science Program

Introduction

The Inova Fairfax Hospital Medical Laboratory Science Program is a division of the department of pathology. The program, which opened in 1963, is a highly competitive, 11 month training program in Medical Laboratory Science, enrolling up to 6 students annually. At the end of the clinical year and upon successful completion of all program requirements, students are awarded a certificate from the Inova Fairfax Hospital School of Medical Laboratory Science Program and are eligible to sit for the National Registry Examination.

The program is intended to qualify its graduates to take the National certification examination given by the American Society for Clinical Pathology in pursuit of the MT/MLS (ASCP) certification. The certification is necessary in order to work as a Medical Laboratory Scientist. The program is fully accredited by the National Accrediting Agency for Clinical Laboratory Sciences, 5600 N. River Rd, Suite 720, Rosemont, Illinois 60018, (773) 714-8880, www.naacls.org. The Inova Fairfax Hospital School of Medical Laboratory Science is certified to operate by the State Council of Higher Education for Virginia (www.schev.edu), James Monroe Building, and 101 North Fourteenth Street, Richmond, Virginia 23219.

The students are trained as generalists in the program through a combination of classroom, student lab and clinical practicum experience. During their clinical year of training, students rotate through the laboratory sections and participate in a corresponding lecture series. Laboratory rotations include Blood Bank, Chemistry, Coagulation, Hematology, Immunology, and Microbiology. Settings for laboratory rotations include the Inova Fairfax Hospital Laboratory, the Inova Blood Donor Services, Inova Laboratories and the facilities of Quest Diagnostics Nichols Institute, Inc. Here students receive systematic instruction and practical experience in technical methods and learn the relationship of laboratory test results to disease states.

The classroom is the setting for the lecture series. Through the lecture-conference method, emphasis is placed on understanding the theory behind the technical methods learned in the laboratory and their clinical applications. The Student Handbook contains detail information regarding the program's policies, curriculum, students' rights, privileges and responsibilities. Students are encouraged to use this handbook as a reference during the program.

The Medical Laboratory Science Profession

Medical Laboratory Scientists also known as Clinical Laboratory Scientists and Medical Technologists are highly skilled professionals who perform analytical tests on blood, tissue and body fluids to provide information pertinent to the detection, diagnosis and treatment of disease.

In addition, tests are performed to aid in disease prevention and maintenance of good health. Medical Laboratory Scientists work in all areas of the clinical laboratory including transfusion services, chemistry, hematology, immunology, microbiology, molecular diagnostic and urinalysis. They are responsible for performing laboratory tests efficiently and accurately and reporting their findings to physicians. Technologists perform quality control and instrument maintenance as well as exercise independent judgment in dealing with procedural and technical problems.

Medical Laboratory Scientists are employed by private laboratories, physician offices, hospitals, clinics, the armed forces, local, state and federal health agencies, industrial medical laboratories, pharmaceutical companies, and in numerous public and private research programs dedicated to the study of specific diseases.

Statement of Purpose:

The Inova Fairfax Hospital Medical Laboratory Science Program is dedicated to the advancement of knowledge, to instruction of students in laboratory theory and techniques and to the provision of laboratory healthcare. The major concern of the Inova Fairfax Hospital and the laboratory is the patient. However, within the framework of a teaching hospital, the Medical Laboratory Science program is able to afford the opportunity for medical laboratory education in a real-world setting. The Program, well aware of the rapidity of change, seeks to provide the most meaningful education for its students, by constant re-examination of its methods and goals.

Our Commitment:

The educational commitments of the Program are to graduate medical laboratory scientist with competence to perform the laboratory procedures in all areas of the laboratory with an understanding of the clinical significance of test results to the physician and the patient. Graduates are eligible for certification as medical laboratory scientist and are prepared to enter the allied medical field as professional laboratorians.

Program Goals:

- Assure that entry-level medical laboratory scientists are adequately trained and equipped with the knowledge, skills and background experience essential for becoming a professional medical laboratory scientist.
- To provide the most meaningful and high quality clinical education experience for our students both academically and clinically in all areas of the clinical laboratory so that students are well prepared for the workforce.
- To offer a sustainable curriculum that meets and exceeds the standards of training set forth by the National Accrediting Agency for Clinical Laboratory Science.
- To graduate well qualified medical laboratory scientists to achieve a passing score on the national certification examination.
- To recruit and employ program graduates in the state of Virginia and the nation.

The Laboratory

The laboratory at Inova Fairfax Hospital is accredited by the College of American Pathologists, CLIA, and the American Association of Blood Banks. Diagnostic tests are performed in a wide variety of disciplines including hematology, urinalysis, body fluid analysis, clinical chemistry, immunohematology (blood banking), immunology and flow cytometry, microbiology, and parasitology using a wide variety of manual and automated methods.

In microbiology there are automated analyzers and molecular diagnostic equipment to assist with organism identification and susceptibility testing. The hematology laboratory contains specialized instrumentation for Flow Cytometry and automated microscopy. Results from computerized instruments are interfaced and automatically entered into the laboratory information system for technologist review. Daily cumulative laboratory result summaries are prepared for each patient for whom tests are performed.

All laboratory staff including pathologists and certified medical laboratory scientists, maintain continuous laboratory service 24 hours a day. Staff members participate actively in professional societies which provide continuing educational opportunities for advancement. An active in-service educational program is conducted for laboratory personnel.

Contact Information

Information about the Inova Fairfax Hospital Medical Laboratory Science Program may be obtained by contacting the following individuals.

Program Director: **Amy Shoemaker, MBA, MT(ASCP)DLM**
Inova Fairfax Hospital
School of Medical Laboratory Science
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(703)776-2891

Program Coordinator: **Shabrina Shah MT(ASCP)**
Shabrina.shah@inova.org
(703)776-2695
(703)776-3401

Website Address: <http://www.inova.org/clinical-education-and-research/education/education-for-students/medical-technology-program.html>

Hours of Operation

The School is located within the clinical laboratory at Inova Fairfax Hospital. The laboratory is operational 24- hours-a-day, 7-days-a-week. Students have access to the laboratory at any time by use of employee badge. School officials (Program Director, Program Coordinator) are generally onsite Monday through Friday from 7:00 am – 4:30 pm. For hours of required attendance for students, please see the Attendance Policy-Hours section of this handbook.

Personnel – Medical Laboratory Science Program

Medical Director.....	Hassan Nayer, MD, Chairman, Department of Pathology
Program Medical Director / Advisor.....	Lucy Nam, MD, Pathologist
Program Director.....	Amy Shoemaker, M.B.A. MT (ASCP) DLM, Director, Laboratory Services
Program Coordinator.....	Shabrina Shah MT(ASCP)
Teaching Technologists:	
Blood Bank.....	Daniel Carbaugh MLS (ASCP)
Chemistry	Runna Sun,MLS(ASCP)
Coagulation.....	Mijung Lee, MT(ASCP)
Donor Center.....	Nicolas Lilly
Hematology.....	Laura Deem, MT (ASCP)
Microbiology.....	Nathan Grow, MT (ASCP)
Urinalysis.....	Jennifer Thura, MT(ASCP)SH

II. Curriculum and Requirements of the Medical Laboratory Science Program

Curriculum

The Medical Laboratory Science Student will study the clinical and diagnostic aspects along with case studies, pre-analytical, analytical and post-analytical components of laboratory services, problem solving, and instrumentation, point of care, safety, quality control and quality assurance for the courses listed below. The program consists of six courses containing didactic lectures and supervised education in the clinical laboratories of chemistry, hematology, immunohematology, immunology, microbiology, Coagulation, Urinalysis, Lab Operations and phlebotomy.

In order to graduate from Inova Fairfax Hospital Medical Laboratory Science Program and to qualify to take the Registry examination, the requirements are as follows:

Course Descriptions

- **MT 401 Orientation to the Problems and Practices of the Clinical Laboratory**
Orientation to the clinical laboratory - Specimen collection and record keeping, including phlebotomy. The primary function of a phlebotomist is to assist the health care team in accurate, safe and reliable collection and transportation of specimens. Laboratory operations includes: discussions of quality control, budgeting, personnel, laboratory space, supplies and equipment, concepts and principals of laboratory operations, general principles of federal and state regulations, laboratory safety, laboratory and hospital information system, ethics and medical/legal matters. Basic laboratory techniques such as pipetting, microscopy, and laboratory mathematics are also included.
- **MT 402 Clinical Hematology and Coagulation**
Course involves the study of maturation, morphology and function of blood cells and their role in disease processes. Emphasis is placed on both manual and automated laboratory procedures, blood cell identification, and the relationship of cells with specific diseases such as anemia, leukemia, lymphomas and reactive processes.
This course also covers the mechanisms involved in the coagulation system, including platelet function, coagulation factors, and fibrinolytic system. Bleeding and clotting disorders as well as treatment modalities are discussed. Laboratory evaluation of the hemostatic process and the correlation of laboratory findings with disease states will be emphasized.
- **MT 403 Clinical Microscopy**
This course of study covers the physical, chemical and microscopic analysis of urine. Renal function, disease states, and the physiology and clinical analysis of CSF and other body fluids are also covered. Emphasis is placed on laboratory procedures, morphological findings and the correlation of test results to disease states.
- **MT 404 Immunohematology**
Topics of study include genetics and biology of red cell antigen systems, ABO/Rh blood typing, antibody screening and identification, compatibility testing and solving compatibility problems, additional laboratory analyses, and donor requirements, preparation of blood components for transfusion, quality and inventory control, instrumentation, and current practices in component preparation.

- **MT 405 Clinical Microbiology**
This course looks at pathogenic bacteria, mycobacteria, parasites, viruses and fungi of humans in relation to pathogenesis, epidemiology, clinical manifestations, infectious diseases and antimicrobial agents. Practical laboratory instruction include specimen collection; handling and transport; media composition and utilization; culture, isolation and identification methods; and automation, quality control methods and laboratory safety.
- **MT 406 Clinical Chemistry**
Study of the biochemical constituents of body fluids, their physiological functions and alterations in disease states. Emphasis is placed on the analytical methods of the laboratory. This includes the study of the principles, operation and maintenance of laboratory instrumentation, the use of computer technology, quality control and quality assurance tools.

Student Project

The student project is an independent study. On the job, a medical laboratory scientist is expected to be able to improve old methods and to evaluate and implement new methods. These on-the-job assignments might range from reorganization of the workload in a department in a management role to setting up new test procedures.

The purpose for the student project is to provide the student with:

- Experience in evaluating the need for change by means of the research involved in getting the project approved through a project proposal.
- Experience in the actual process of reorganization or setting up new procedures. New procedures provide students with working experience in Quality Control, cost analysis, statistics, establishment of normal values and other areas that the medical laboratory scientist are asked to evaluate in the laboratory.
- Whether or not the laboratory adopts the project results, neither adds nor detracts from the validity of the project. The purpose of the project is to provide a learning experience for the student, not a service to the laboratory.

Educational Objectives

Upon graduation and initial employment, the medical laboratory scientist should be able to demonstrate entry level competencies in the areas of professional practice listed below.

Medical Laboratory Scientist Are Proficient In:

- Establishing procedures for collecting and processing biological specimens for analysis.
- Performing analytical tests on body fluids, cells and products.
- Integrating and relating data generated by the various clinical laboratory departments while making judgments regarding possible discrepancies; confirming abnormal test results; verifying quality control procedures; and developing solutions to problems concerning the generation of laboratory data.
- Making judgments concerning the results of quality control measures and instituting proper procedures to maintain accuracy and precision.

- E. Establishing and performing preventive and corrective maintenance of equipment and instruments, as well as identifying appropriate sources for repairs.
- F. Evaluating new techniques, instruments and procedures in terms of their usefulness and practicality within the context of a given laboratory's personnel, equipment, space and budgetary resources.
- G. Demonstrating professional conduct and interpersonal communication skills with patients, laboratory personnel, other healthcare professionals, and with the public.
- H. Recognizing and acting upon individual needs for continuing education as a function of growth and maintenance of professional competence.
- I. Leading supportive personnel and peers in their acquisition of knowledge, skills and attitudes.
- J. Applying principles of management and supervision.
- K. Applying principles of educational methodology.

Skills and Abilities Expected at Career Entry

Communication

The Medical Laboratory Scientist communicates technical or general information to medical, paramedical or lay individuals. This may include problems or matters of a scientific, technical and/or administrative nature.

Judgment and Decision-Making

The Medical Laboratory Scientist has the ability to exercise initiative and independent judgment in dealing with the broad scope of procedural and technical problems. The Medical Laboratory Scientist is able to participate in, and may be delegated the responsibility for decisions involving quality control programs, instrument selection, preventative maintenance, safety test procedures and reagent purchases.

Knowledge

The Medical Laboratory Scientist has an understanding of the underlying scientific principles, as well as the technical and procedural aspects of laboratory testing. The Medical Laboratory Scientist has a general comprehension of the physiological, biochemical, immunological, microbiological and genetic factors, which affect health and disease, laboratory tests and the importance of laboratory tests to medical care. The Medical Laboratory Scientist is familiar with the various services available in the hospital and has an appreciation of the roles and interrelationships of paramedical and other health related fields.

Technical Skills

The Medical Laboratory Scientist is capable of performing technically demanding tests. The technologist has a theoretical understanding of quality assurance sufficient to monitor and to implement quality control programs. The Medical Laboratory Scientist is able to participate in the introduction and implementation of new procedures and in the evaluation of new instruments. This includes a basic knowledge of accuracy, precision, normal ranges and correlation with existing methods.

III. Resources

Library and Learning Resources

A collection of current texts, periodicals and other learning tools for use by the students and laboratory staff are kept in each department and also the Laboratory conference room. These items may be checked out on the honor system. Items may be kept as long as needed provided that no one else has requested use of the item and that all items are returned in good condition by the last day of class for the school year in which the items were borrowed. Failure to return items that have been checked out will result in a lock placed on the student's account whereby the student's certificate of completion will not be issued until either the item is returned in good condition or payment for replacement of the item has been received.

In addition, the Inova Fairfax Hospital has a Health Sciences Library. The library is housed in Inova Fairfax Hospital/Inova Children's Hospital and is located in the atrium at the top of the escalators in the connector corridor between the Tower Lobby and the Inova Women's Hospital.

The Health Sciences Library provides resources and services to Inova physicians, employees, affiliated residents and students for their work as it relates to patient care, education, research and management. The library, through the Consumer Health Resource Center, also provides resources and services to assist patients, their families and the local community.

The library's information resources provide access to clinical and managerial literature, online databases, patient education, quality improvement, continuing education and research. The scope of the collection reflects Inova's primary needs with resource concentrations in medicine, nursing, allied health, health care administration and patient education.

The library provides access to MEDLINE, CINAHL, MDCConsult, Evidence-Based Medicine Reviews, Health Business Fulltext, Health & Wellness Resource Center, among others and over 1000 full-text electronic journals, books, journals, audiovisual and multimedia materials.

Extensive reference service is provided by experienced medical librarians who access information from the library collection and online databases as needed.

Clinical Resources

A variety of resources, including clinical, reference and demonstration materials, i.e., practice specimens, stock cultures and case studies, are used in each laboratory section for student instruction. Educational materials are available via computer in certain sections of the Laboratory.

Blood Bank is semi-automated. Students will learn how to perform both automated and manual techniques using available patient samples, frozen sera, enhanced samples and survey samples. Various computer programs and websites are also used for training.

Coagulation instruction also involves practice on unknown samples for analysis and a set of case histories and study question related to the coagulation learning of objectives.

Chemistry is highly automated and students use available patient samples, controls, calibration standards, and survey samples for learning experiences.

Urinalysis provides a set of color kodachromes of urinary sediment for one-on-one instruction. After review of the kodachromes, a double-headed microscope is used to instruct students in the interpretation of urinary sediment in patient samples.

Hematology has numerous stained peripheral smears of normal and abnormal WBC's and RBC's. Each set of slides has a group of unknowns for the student to identify after the WBC and RBC unit of instruction is taught. Teaching slides for special stains and body fluids are also used. A double-headed microscope is used for these lessons. Study guides and Blood Cell Morphology Slides from ASCP are available and used for independent study of WBC's, RBC's, and body fluids.

The students are provided with laboratory equipment and fresh patient samples to use in setting up manual tests such as reticulocyte counts, manual platelet and white blood cell counts, sedimentation rates, body fluid cell counts, kleihauer stains, malaria smears and microhematocrits. In addition to the teaching microscopes, students are introduced to state-of-the-art automated microscopy through the use of Cellavision, a learning tool to help the students evaluate normal and abnormal RBCs and WBCs. Hematology self-study practice disks are used to introduce students to normal WBC morphology.

During the last week of their rotation students are provided with a variety of slides and kodachromes to evaluate as part of their practical exam. Near the end of the Hematology rotation, case histories are assigned to the student. A narrative accompanied by peripheral smears and/or color kodachromes is reviewed for diagnosis by the student.

Microbiology has numerous bacterial and fungal stock cultures which are given to the students as unknowns for identification. A specified number of unknowns are to be identified throughout the rotation. All biochemical testing materials, media, and incubators used in this section are available for the students to use during their rotation. The Parasitology unit of instruction is a self-study section. Students are provided with microscopic material. A variety of preserved specimens are used for instruction and as unknowns for identification.

A complete list of stock cultures, test kits, and miscellaneous material is available on-site. The hospital patient population provides a broad spectrum of body fluid specimens to the laboratory. The trauma center, oncology, critical care units, open-heart program, transplant program, intensive neonatal care, organ-donor program, stem-cell program, and dialysis unit supply a multitude of learning experiences for the students. Students learn about interesting cases as they rotate through laboratory sections.

Computer Access

The Inova Fairfax Hospital Laboratory Information System (LIS) which interfaces with the Hospital Information System (HIS) is used for laboratory orders, results and patient demographics. Many laboratory instruments are interfaced with the LIS allowing results to be verified and captured directly on-line from the instrument. Results print on the units for all stat and critical results. Chart updates are printed on a daily basis.

Students are trained to use designated functions in the LIS in all clinical areas. Initial training on the system is conducted during the orientation week by the designated LIS and HIS trainer. All students are required to successfully complete a competency on the system before access is given. Students sign a system access form indicating that they have received instruction regarding appropriate access to the system and patient confidentiality prior to receiving access to the system. Students receive instruction in the use of computers in the Laboratory.

Students will be given a user name and password with which to access the Inova Health System computer system. All hospital policies and procedures related to computer usage must be followed. Through this access students will have the use of an Inova Health email address, internet, and presentation/spreadsheet/word-processing software. There are computers for student use in the laboratory conference room and also in each department, accessible twenty-four hours a day. In addition, printers are connected to these computers for student use.

IV. Student Disclosure Information

Transfer Credit Policy

The academic institution listed in the 'Affiliations' section of this handbook have agreed, by signed affiliation agreement, to award transfer credit for the clinical year towards a baccalaureate degree for students enrolled as a 3+1 student at the time of program completion. Students already possessing baccalaureate degrees may be enrolled if they meet admission requirements. For students already possessing baccalaureate degrees, credits earned at this school are transferable to another institution at the sole discretion of the accepting institution.

The Inova School of Medical Laboratory Science will not accept transfer credits from another institution. All credit applicable toward the certificate of completion must be completed in this program.

Students enrolled in the Inova Fairfax Hospital School of Medical Laboratory Science who have experience working in a clinical laboratory will not be granted exemption from any aspect of the program.

Transcripts are prepared at the end of the year, or at intervals as requested by the degree-granting institutions. Individual students must advise the Program Coordinator at least one (1) week in advance when transcripts are needed. Transcripts are kept on file and forwarded to affiliated universities of three-plus-one program students upon completion of the Program. The university affiliates award the Baccalaureate degrees upon satisfactory completion of the clinical year.

Course Number	Course Title	Credit Hours
MTCH 401	Orientation to the Problems and Practices of the Clinical Laboratory	1
MTCH 402	Clinical Hematology and Coagulation	7
MTCH 403	Clinical Microscopy	1
MTCH 404	Serology and Immunochemistry	7
MTCH 405	Clinical Microbiology	6
MTCH 406	Clinical Chemistry	8

Grading Policy

The program maintains standard for academic, technical and professional performance. Standards must be met in all areas for successful completion of the program.

Practical and written examinations based on stated objectives are given to measure knowledge of the subject and proficiency in performing procedures. At the end of the instruction period in each department a final grade, based on written and practical work is recorded. During the final weeks of the Program, students are given a Comprehensive Examination, which includes questions over all phases of medical laboratory science.

The following grading scale is as follows:

- 100-90 A
- 89-80 B
- 79-70 C
- 69-60 D
- Below 60 F

The final course grade at the end of the year will constitute 60% of the lecture grade, 40% of the laboratory rotation grade. 90% of the combined lecture and laboratory grade will then be added to 10% of the comprehensive examination grade. Letter grades will be assigned based upon the above grading scale.

DIDACTIC REQUIREMENTS

Graduates of the program are expected to understand theory in all areas of laboratory work; therefore, a passing average of 70% is required overall in each lecture series. This grade received for lecture represents 60% of the final grade for that subject. If a student fails to maintain a passing average in a lecture series, the student will be placed on probation for the duration of the specific lecture series in which satisfactory grades are not maintained. During the probation period, the teaching technologist will work with student at their discretion. Probation requirements will be set by the teaching technologist who will include the option to retake an exam.

If probation requirements are not met the student can choose to either repeat the entire lecture series or to be removed from the program.

LABORATORY REQUIREMENTS

Graduates of the program must be proficient in all areas of the laboratory; therefore, students complete a clinical rotation in each section. A satisfactory evaluation for every laboratory section is required. If at the end of a laboratory rotation the evaluation is unsatisfactory, the student will be required to return to that laboratory section until a satisfactory evaluation has been achieved. This additional time will be scheduled at the end of each day and/or at the end of the student year at the discretion of the teaching technologist. The laboratory grade comprises 40% of the final grade.

COMPREHENSIVE EXAMINATION

The purpose of this examination is to prepare students to take the board of registry examination. During the final weeks of the Program, students are given a Comprehensive Examination, which includes questions over all phases of Medical Laboratory Science. Students prepare by reviewing information from lecture and laboratory. The final grade for each laboratory section will be adjusted to include 10% for the comprehensive examination. A student must receive an overall passing grade of 70% on each section of the Comprehensive Examination. Students who do not receive a passing grade on each section of the exam will be allowed to take that section one additional time within one week. If a passing grade of >70% is not obtained on the repeat examination, the student will be placed in Academic Probation. If the student does obtain >70% on a retake exam, the maximum grade recorded will be 70.

Student Evaluation of the Program

Students are required to complete and turn in an evaluation form to the Program Coordinator at the end of each laboratory rotation, stating whether or not the objectives were achieved. Students are asked to give an evaluation of the instruction provided in that section and they are also encouraged to give feedback about the rotation; such as, suggestions for changes and comments about the positive and negative aspects of the rotation. Grades are held until the evaluation is received by the Program Coordinator.

At the end of each lecture series, students are required to complete an evaluation form for the Program Coordinator. Students are asked to evaluate the lecture series regarding the instruction that was given throughout the entire time, whether or not the objectives were achieved, fairness of examination, visual aids, etc. We appreciate having constructive feedback regarding our Program.

Grievance Policy

Any student may submit an appeal in writing to the Program Coordinator, grievances or concerns to be brought before the Education Committee. The Education Committee consists of the following individuals as appropriate/ available: Program Director, Program Coordinator, Medical Director of the School and the teaching technologists. Actions taken to resolve formal complaints will be communicated to the individual(s) involved as appropriate. A record of complaints and steps taken to resolve any problem will be maintained by the Program Coordinator. Should the student find the resolution unsatisfactory, or feel the complaint is with the Program Coordinator, the complaint may be submitted directly to the Administrative Director of the Laboratory or Medical Director of the School.

In addition, Inova Health System Problem Solving Policy defines the employee grievance procedure. The personnel policies of this institution apply to medical laboratory students. A student may choose to follow the Personnel policy for employee grievances instead of the Program's appeal procedure depending on the circumstances involved. Students are made aware of this process during the hospital orientation. Additionally, the Human Resources policy manual is available online at all times for student review.

The Inova Fairfax Hospital Medical Technology Program adheres to the following Inova Health System policies found on Inova Fairfax Hospital's internal website.

- Inova Health System Policy Problem Solving
- Inova Health System Policy Progressive Discipline
- Inova Health System Policy Personnel Record Confidentiality

The State Council of Higher Education for Virginia (SCHEV) may be contacted as the agency of last resort for grievances that the student feels were not properly addressed by Advisory Committee as described above. In any case, the student will not be subject to any unfair action and/or treatment by any school official as a result of the initiation of a complaint. SCHEV, 101 N 14th Street, 9th Floor, Richmond, VA 23219, phone number (804-225-2600) and website www.schev.edu.

Primary Appeals (Grades)

Students who wish to appeal a grade must make every effort to contact the instructor and discuss concerns before beginning the official grade appeal process. Students can reach their instructor by e-mail or telephone number as provided in the student manual. The student must request grade review within a week of receiving the evaluation. If the student finds the resolution is unsatisfactory, the grade appeal will then be evaluated by the Program Coordinator and the Program Director. A response will be given within one week. The student will not be subject to any unfair action and/or treatment by any school officials as a result of the initiation of the appeal. Should the student not be satisfied with the outcome of this primary response, they may proceed with the advanced appeal process.

Advanced Appeals

In the event that a student is not satisfied with a decision made including dismissal from the program and he or she wishes to appeal that decision, the following procedure should be followed: A formal letter of appeal should be submitted to the Medical Director of the school, explaining the grounds for appeal. The appeal will be submitted to the Administrative Committee to include, Human Resource, Director of the Laboratory, Chief Pathologist and the Medical Director of the school. Review of the appeal and final decision will be made by the Administrative Committee and final action will be stated to the student in a formal letter.

The Program Director and Program Coordinator are available for student support and assistance regarding Program policies and practices and academic problems. Any such guidance sessions remain confidential. At Inova Fairfax Hospital we ensure the right to privacy and confidentiality by creating and maintaining a secure and trusting environment. We will treat all student information as

confidential. Discussion of these matters will be restricted to situations where the information is necessary to meet the student's needs. We protect students' confidentiality by preventing the disclosure of their personal information to any unauthorized parties. In addition, we do not discuss personal matters in the presence of a student. The Medical Laboratory Science Program adheres to the Inova Health System Policy Personnel Record Confidentiality.

V. Probation Dismissal and Readmission

Probation

Students must maintain a passing grade of 70% throughout the program. Unsatisfactory performance will result in a probationary status if any of the following criteria are met:

- Failure of any three graded activities (including written, practical, final and comprehensive exams), assignments and student evaluation.
- Failure of any repeat final exams
- Failure to obtain >70% in the overall grade of a course
- Overall program GPA of <2.0

Any of the above will be subject to Academic Probation. Students will be placed on probation for the duration of the specific rotation or lecture series in which satisfactory grades are not maintained as outlined in the Student Disclosure Information Grading Policy section.

During the probation period, the student will be required to spend additional time in the area of rotation and/or lecture in which they are delinquent. Additional time will be decided by the teaching technologist at their discretion and may be added to the end of each day and/or end of the year. If probation requirements are not met, the student will be dismissed.

For the 3+1 students under Academic Probation, their academic advisor will be notified in writing.

Dismissal Policy

The following are causes for dismissal from program:

- Students are subject to dismissal if satisfactory grades are not maintained throughout the program and/or probation requirements are not met.
- Students may be dismissed for continued ill health, inability to fulfill program requirements according to established standards, or negligence, especially with regard to patient care.
- Unethical conduct will not be tolerated and may result in dismissal from the program.
- Dishonest practices, such as lying, cheating, stealing or falsifying results, will result in immediate expulsion of the student, or students, involved. All students are expected to comply with the Inova Health System Standards of Behavior
- Failure to abide by the Honor Code or for violating any established rules set forth by the hospital, and/or the school of medical laboratory science.
- Cases involving threat or harm to others will result in an immediate dismissal.
- Excessive unexcused absences

In addition to the program dismissal policy, the Inova Fairfax Hospital Medical Laboratory Science Program adheres to the following Inova Health System policies found on Inova Fairfax Hospital's internal website.

- Inova Health System Policy Code of Conduct
- Inova Health System Policy Compliance and Ethics

- Inova Health System Policy Workplace Violence
- Inova Health System Mission, Vision, Values & Customer Service Standards

Dismissal Decision

A student who is dismissed may appeal in writing to the Education Committee, consisting of the medical director, the laboratory director, program coordinator and a medical laboratory scientist selected by the student, stating the reason for and goals of the appeal as outlined in the Grievance Policy Appeals Section. The student's appeal will be evaluated with consideration being given to their past performance, the nature of probation, the length of time they have been in the program and the student's defense statement.

The decision of the Education committee will be a final decision. If the student is allowed to remain in the program on a provisional status, required conditions must be met for continued progression.

Dismissal due to threat or harm to others will result in immediate dismissal and the student will be prohibited from readmission in the future.

The student will receive a formal written notification of the decision made by the Education Committee. A record of appeal and steps taken to resolve any problem will be maintained by the Program Coordinator.

If a student in the 3+1 program is dismissed, their academic advisor will be notified in writing. They will be awarded credit for any successfully completed courses.

Withdrawal

If a student decides to withdraw due to personal reasons, they are required to submit a written letter stating their intentions to the Program Director. Student will be awarded credit for any successfully completed courses.

Readmission

Following reasons will prohibit readmission to the program:

- Dismissal due to dishonesty, such as lying, cheating, stealing or falsifying results and/or violation of the honor code.
- Dismissal due to noncompliance with the Inova Health System Standards of Behavior.
- Dismissal due to threat of harm to others.

Withdrawal due to personal reasons, the student will be allowed to reapply to the program. Readmission will not be guaranteed.

If a student is dismissed due to academic reasons, the student may reapply for readmission. Proof of improvement may be requested by the Education Committee to demonstrate that the student has resolved any problems causing unsatisfactory progress and/or conduct.

VI. Student Conduct

All students are expected to comply with the policies set forth by the Inova Fairfax Hospital School of Medical Laboratory Science and by the Inova Health System. All students are expected to behave in a professional manner and adhere to the Inova Health System Standards of Behavior. Violation of any School and/or Hospital policy may result in dismissal from the program as outlined in the Probation, Dismissal and Readmission Section of the student handbook. If a student is dismissed due to misconduct, the student may choose to appeal as outlined in the Grievance Policy Appeals Section.

Readmission is prohibited if a student is dismissed due to misconduct as outlined in the Probation, Dismissal and Readmission Section.

Supervision

In each department of the laboratory, the student is under the immediate supervision of a teaching technologist. At all times the student is under the direct supervision of the program director. Students are not permitted to verify results during instructional hours. Students are allowed to verify test results after the instructor has completed a competency assessment on the student and under direct supervision only. Students are trained to use designated functions in the Laboratory Information System during orientation week. All students are required to successfully complete a competency on the system before access is given. Students sign a system access form indicating that they have received instruction regarding appropriate access to the system and patient confidentiality prior to receiving access to the system. Students receive instruction in the use of computers in the Laboratory. Students will be given a user name and password with which to access the Inova Health computer system. All hospital policies and procedures related to computer usage must be followed. Students will gain practice in resulting under direct observation of their teaching technologist. The teaching technologist will assume all responsibility for the patient results.

In addition, The Inova Fairfax Hospital Medical Laboratory Science Program adheres to the Inova Health Systems Policy HIPAA Privacy and Security Compliance.

Dress Code

Students must maintain a professional appearance according to the Inova Fairfax Hospital Professional Appearance policy, Employee Identification System, Standards of Behavior Professionalism and the following Medical Laboratory Science Program Dress Code.

Lab personal are required to wear Lab coats, gloves and other personal protective equipment while in the laboratory. These will be provided by the laboratory and must be worn according to policy.

- Wear clothing appropriate for the laboratory work area. A new uniform code established by the IFH Professional Services makes it easier to identify the roles of the IFH healthcare teams. **Dark brown Scrub tops and pants** are to be worn by the Laboratory personnel. This is intended to help improve patient satisfaction and patient safety.
- Name tags are to be worn at all times. They should be above the waist with name showing. Name tags in disrepair should be replaced.
- Sandals, open style shoes, Crocs and soft-sided slipper type shoes do not afford proper foot protection and are not acceptable.
- Long hair should be contained in some way so it does not hang freely and interfere with equipment or reagents.
- Fingernails should be clean and of a length short enough not to be uncomfortable to patients. They cannot be artificial.
- Any Jewelry that may have potential to be a safety hazard should not be worn.

The Inova Fairfax Hospital Medical Laboratory Science Program adheres to the following Inova Health Systems Policies found on Inova Fairfax Hospital's internal website.

- Inova Health System Policy Professional Appearance
- Inova Health System Policy Employee Identification System
- Inova Health System Policy Workplace Safety

Personal Communication

Telephone Usage:

Telephones in the Inova facilities are for business use only, except in emergencies. There are public telephones available for personal phone calls during your break time. Please restrict phone calls from friends and family to emergencies only.

Cell Phone or Other Similar Device Usage:

Students may not use personal cell phone or other similar device to receive or place calls, text messages, surf the Internet, check phone messages or receive or respond to e-mail while in any way performing activities related to the Medical Laboratory Science Program. If you must use your cell phone, find a private, quiet place to call or text during a break or while at lunch.

E-Mail/Internet Usage:

The Inova e-mail system is for business use only. E-mail is not to be used in any way that may be disruptive, offensive to others or harmful to general morale. Remember that all messages you send or receive are Inova records, which Inova reserves the right to access and disclose. The use of the Inova e-mail system is a privilege, not a right, and may be revoked at any time for inappropriate or abusive conduct.

Student Employment Policy

Students can begin working after completing training in certain areas of the laboratory and They are compensated at a student rate salary. This is encouraged since it enhances a student's job opportunities after graduation.

- Students accepted into the Medical Laboratory Program become employees of Inova Fairfax Hospital; therefore applicants must be eligible to work in the United States.
- To become an employee, the Federal Government requires a form of identification proving eligibility to work in the United States. Examples of acceptable documents include Social Security Account Number and Permanent Resident card or Alien Registration Receipt card.
- Employment is contingent upon having satisfactorily passed all parts of the employment process which includes a health assessment, background check and a drug screen.
- Competency assessment on the student must be signed by the instructor before employment in that specific section of the laboratory.
- Students must demonstrate proficiency and competence before employment.
- Service work by students in clinical settings outside of academic hours must be noncompulsory.
- Students may not be substituted for regular staff during instructional hours.
- Students will be supervised by the department supervisor at all times.

The Inova Fairfax Hospital Medical Laboratory Science Program adheres to the following Inova Health Systems policies found on Inova Fairfax Hospital's internal website.

- Inova Health System Policy Preplacement Health Screen
- Inova Health System Policy Employee Occupational Health Scope of Service
- Inova Health System Policy Immunization Program

Drug/Alcohol/Tobacco and Weapons Policy

Admission is contingent on applicant evaluation and drug screening by Inova Fairfax Hospital's Employee Health Office and clearance by Inova Fairfax Hospital's Human Resources Office to include a criminal background check. Evaluation and clearance by Inova Fairfax Hospital's Employee Health and Human Resources offices must take place no later than one month prior to the start date of the program. Failure to satisfactorily complete these evaluations by this deadline will result in revocation of the conditional admission. In such a case, the applicant must reapply in the next admission cycle to be

considered for future acceptance.

Inova Health System has a zero tolerance level for infraction of these policies therefore any violation of the Inova Health Systems Policy regarding possession of weapons, use of illicit drugs, distribution and alcohol will result in dismissal from the program.

Inova Fairfax Hospital is a tobacco-free campus. Tobacco products of any kind are not permitted on Inova Fairfax Hospital property.

Weapons of any kind are prohibited at all times on Inova Health System properties.

The Inova Fairfax Hospital Medical Laboratory Science Program adheres to the following Inova Health Systems Policies found on Inova Fairfax Hospital's internal website.

- Inova Health System Policy Drug Free Workplace Policy
- Inova Health System Policy Tobacco Free Workplace Place
- Inova Health System Policy Possession of Weapons

Inova recognizes that alcohol and drug abuse and addiction are treatable illnesses. We also realize that early intervention and support improve the success of rehabilitation. To support our employees, Inova Health System offers all employees assistance with alcohol and drug problems through the Inova Employees Assistance Program (EAP). They may request help by calling 1 (800) 348 0110.

Honor Policy

All students are expected to comply with the policies and rules set forth by the School of Medical Laboratory Science and Inova Health System Standards of Behavior. Unethical conduct will not be tolerated and may result in dismissal from the program. Dishonest practices, such as lying, cheating, stealing or falsifying results, will result in immediate expulsion of the student, or students, involved.

Violations of the honor policy may result in dismissal from the program. The student may file for an appeal as outlined in the Probation Dismissal and Readmission Section.

Ethics Policy

The Inova Fairfax Hospital Medical Laboratory Science Program has adopted the Code of Ethics of the American Society for Clinical Laboratory Science (ASCLS) listed below and also can be found on ASCLS website at <http://www.ascls.org/about-us/code-of-ethics>.

Preamble

The Code of Ethics of the American Society for Clinical Laboratory Science sets forth the principles and standards by which clinical laboratory professionals practice their profession.

I. Duty to the Patient

Clinical laboratory professionals are accountable for the quality and integrity of the laboratory services they provide. This obligation includes maintaining individual competence in judgement and performance and striving to safeguard the patient from incompetent or illegal practice by others. Clinical laboratory professionals maintain high standards of practice. They exercise sound judgment in establishing, performing and evaluating laboratory testing. Clinical laboratory professionals maintain strict confidentiality of patient information and test results. They safeguard the dignity and privacy of patients and provide accurate information to other health care professionals about the services they provide.

II. Duty to Colleagues and the Profession

Clinical laboratory professionals uphold and maintain the dignity and respect of our profession and strive to maintain a reputation of honesty, integrity and reliability. They contribute to the advancement of the profession by improving the body of knowledge, adopting scientific advances that benefit the patient, maintaining high standards of practice and education, and seeking fair socioeconomic working conditions for members of the profession.

Clinical laboratory professionals actively strive to establish cooperative and respectful working relationships with other health care professionals with the primary objective of ensuring a high standard of care for the patients they serve.

III. Duty to Society

As practitioners of an autonomous profession, clinical laboratory professionals have the responsibility to contribute from their sphere of professional competence to the general well being of the community. Clinical laboratory professionals comply with relevant laws and regulations pertaining to the practice of clinical laboratory science and actively seek, within the dictates of their consciences, to change those which do not meet the high standards of care and practice to which the profession is committed.

Pledge to the Profession

As a clinical laboratory professional, I strive to:

- Maintain and promote standards of excellence in performing and advancing the art and science of my profession.
- Preserve the dignity and privacy of others.
- Uphold and maintain the dignity and respect of our profession.
- Seek to establish cooperative and respectful working relationships with other health professionals.
- Contribute to the general well being of the community.
- I will actively demonstrate my commitment to these responsibilities throughout my professional life.

VII. Attendance/Leave of Absence Information

Hours

The Medical Laboratory Science Program is a full time course of study. Students spend approximately 8 hours, anytime between 7a-4p, in the laboratory Monday through Friday. All assigned work must be completed or the student must be excused by the Teaching Technologist before leaving the department. Staying beyond the scheduled time may be required in order to complete an assignment or for learning experience.

Documentation of Attendance

Students will document attendance upon their arrival and departure from the laboratory by sending a message to the teaching technologist via Inova email system using the designated hospital computers in each department. Sending email using personal cell phone is not acceptable.

After sending a message, students should immediately report to their assigned section and notify the teaching technologist or designee of their arrival. Students are expected to arrive in their department early enough to begin training at their scheduled time. Students should allow ample time for traffic and parking considerations. Also, allow enough time for 'getting situated' – hanging up your coat, preparing your workstation, etc.

Each day lectures are scheduled from 1400 to 1600 unless otherwise noted and students are expected to attend. When a lecture ends prior to 1600, students return to their assigned laboratory rotation and report to the teaching technologist or designee. If the lecture extends beyond 1600,

students are to remain until the conclusion of the lecture. All lecture examinations are to be taken at the scheduled date and time.

Absenteeism/ Tardiness

Any student, who may be ill or unable to report to the laboratory at the scheduled time, must notify the Teaching Technologist in the section to which he/she is assigned and the Program Coordinator if possible at least one hour prior to the expected arrival time. The student should obtain the name of the person to whom he/she is speaking.

Arriving to the laboratory after the scheduled time for a rotation is considered to be an act of tardiness. Tardiness will not be tolerated except for unusual circumstances and will require specific documentation or proof of the occurrence, i.e., traffic accident in which a student is involved.

If a student is absent for more than 4 hours in a day, this will count as a full day absence. In order to count a half day absence, the student must be present for at least 4 hours.

Bereavement leave of 3 days will be provided for absences related to members of the student's immediate family, to include children, spouse, parents, brother, sister, grandparents, grandchildren, mother-in-law, father-in-law, brother-in-law, sister-in-law or any relative living in the household.

Student will be withdrawn from the program if the student has not contacted the school 24 hours after the students last date of attendance, unless valid proof is provided. The Teaching Technologist and the Program Coordinator must be notified.

Excessive Tardiness

Three unexcused incidents of tardiness per department rotation will result in a decrease of 5 points from that rotation grade. Each additional incident of tardiness will result in a decrease of an additional 10 points from that grade.

Personal Days

In addition to the six observed holidays, students may miss five days which includes sick days during the year without penalty. **The five days should not be taken consecutively or on a day when an exam has been scheduled in lecture or in a laboratory rotation.** Personal days may not be taken together with other students. To schedule a personal day in advance, students must complete a Personal Day Request form found in this handbook. Student must submit the original request at least 2 working days in advance to the teaching technologist and give a copy to the Program Coordinator.

If a student exceeds five days of absences, (not including bereavement leave) may result in probation or dismissal unless the student has been approved for leave of absence. Absences exceeding five days involving illness will be handled on case by case basis and will require valid documentation such as a note from a physician.

Student Responsibility

Students must call and give as much notice as possible when they are going to be late. Calling does not excuse tardiness, but it does allow time for lab supervisors and teaching technologists to make appropriate staffing corrections. Students are responsible for making up any lab and/or lecture work missed during a scheduled day off. If additional days must be missed due to unusual and unforeseen circumstances, work not completed in a lab rotation will need to be made up at the discretion of the teaching technologist. Teaching Technologist will work with the students to review missed work.

Laboratory Section Phone Numbers

Blood Bank:

(703) 776-3401

Core Lab (Processing, Chemistry, Hematology and Urinalysis):	(703) 776-3364
Microbiology:	(703) 645-6164
Coagulation:	(703) 645-6162
Donor Center (IBDS):	(571) 434-3619
Senior Technologist:	(703) 776-5757

Leave of Absence

Student must formally request a leave of absence. Leave of absence may be granted in such situations as severe illness/injury, death of an immediate family member requiring a longer period of absence, birth of a child, and call to duty for military services. The request will be reviewed by the Program Director and the Medical Director of the program. The decision to grant or deny leave will depend of the situation, length of time and material/experiences that will be missed. No more than a month of absence will be approved.

Failure to formally request a leave of absence may result in dismissal. If the leave of absence is approved, the student will be responsible for completing all of the missed assignments. The teaching technologist will outline the missed assignments and additional time may need to be added each day and/or year in order to complete all the required assignments. Student must return back to school on the expected date set by the Program Director. In case the student does not return on the expected date, the student will be allowed to reapply for an extension. If an extension is denied and the student does not return, the student will be subject to dismissal as outlined in the attendance policy.

In case a student's leave of absence is denied, the student will be required to continue attendance or choose to resign from the program. The student will be notified of the reason for denial in writing.

School Calendar

The start date of the program is mid-August of each year. The end date of the program is mid-July of the following year.

Class meets Monday through Friday during the school year except for the holiday/break periods listed below.

Labor Day 1 Day
 Thanksgiving 1 Day
 Christmas and New Year's Day Winter Break
 Memorial Day 1 Day
 Independence Day 1 Day
 *Inclement Weather 1 Day
 *(Not guaranteed)

Inclement Weather

An inclement weather day is reserved for severe weather situations that may result in delay or cancelation of class. The decision to delay or close will be made by the Program Director. The students will be notified by email and telephone once the decision has been made. If the student is unsure, it is the student's responsibility to call the school.

Students are expected to arrive on time if the class is **not** delayed. If the class is to be delayed and the student chooses not to attend, this will count as a full day absence. The student should use good judgement and ability to drive in severe weather conditions.

VIII. Tuition, Fees and Refunds

Tuition for the program is **\$4,500** and is paid according to the following schedule:

- \$100 due upon acceptance of the position and signing of the enrollment agreement
- \$1000 due on the first day of class
- \$1000 due on November 3, 2017
- \$500 due on December 1, 2017
- \$1000 due on February 2, 2018
- \$900 due on June 1, 2018

A 14 day grace period from the date each payment is due will be granted. After the grace period, a late penalty of \$20.00 a day will be charged for a maximum of 7 days.

Students are responsible for fulfilling all financial obligations to Inova Fairfax Hospital Medical Laboratory Science Program. Students who do not meet their financial responsibilities are subject to withdrawal from school.

Housing

Students are responsible for their own housing arrangements. Assistance in locating suitable housing is offered by the program at the time of acceptance.

Meals

Students may bring their own lunches or may buy lunch in the Inova Fairfax Hospital cafeteria and café. A refrigerator and microwave are available in the lab staff lounge.

Transportation

Students are responsible for their own transportation to and from Inova Fairfax Hospital as well as to and from the clinical affiliate.) Students are allowed to park for free in the employee garage at the Inova Fairfax Hospital Campus.

Textbooks

Students are responsible for purchasing all the required textbooks that are used for assigned reading and reference work.

Health Care

Students are responsible for their own health insurance. Once accepted into the Program, students undergo a physical examination administered by Personnel Health for all new hospital employees. The examination and tests are without cost to students and employees. Hepatitis B vaccines and influenza immunizations are also available to all employees free of charge. Mandatory, annual PPD testing is administered by Personnel Health and is part of Inova Fairfax Hospital's regulatory compliance.

Refund Policy

An enrolled student is a person who has been offered a position in the program and has paid the \$100 reservation fee and signed the enrollment agreement. Once the agreement and fee has been returned the enrolled student has three business days to cancel their enrollment for a full refund of the reservation fee. If the student decides to cancel their enrollment within the month prior to the start date they will not be entitled to a refund of the reservation fee.

A student who begins the program but withdraws or is dismissed during the first quartile (25%) of the period is entitled to receive a refund 75% of the stated cost of the program for that period. A student who starts the program but withdraws or is dismissed after completing second quartile (more than 25% but less than 50%) of the period is entitled to receive a refund 50% of the stated cost of the program for that period. A student who starts the program but withdraws or is dismissed after completing third quartile (more than 50% but less than 75%) of the period is entitled to receive a refund 25% of the stated cost of the program for that period. A Student who withdraws after completing more than three quartiles (75%) of the program shall not be entitled to a refund. A period is defined as the time beginning with the due date of the payment and ending the day before the next payment is due.

If a student chooses to withdraw, they must submit a formal written notice to include the expected last date of attendance and be signed by the student. In the absence of a formal written notice, the withdrawal is defined as fourteen calendar days after the student's last day of attendance.

If a student is in any way financially indebted to the Inova Fairfax Hospital School of Medical Laboratory Science, the student will not be able to graduate which includes the graduation ceremony and certification exam eligibility.

Financial Aid

The Inova Fairfax School of Medical Laboratory Science program does not participate in the federal student aid program.

IX. Services Available to Student

Academic/Course Advising

School officials (Program Director, Program Coordinator and teaching technologists) are generally onsite Monday through Friday from 7:00 am – 5:00 pm. Students are welcome to drop in or schedule an appointment.

Academic Support Services

The Program does not offer formal tutoring services, note taking assistance, or any other extra assistance in the laboratory and/or classroom. However, the teaching technologists are available if occasional assistance is needed in understanding the course material.

Professional Societies

Professional societies of Medical Laboratory Scientists are organized at national, state, and local levels to promote the continued advancement of the profession. Societies promote public recognition of the profession, encourage high ethical standards, advance the profession through recruitment and education, and re-emphasize responsibilities of the patient's medical team. The American Society of Clinical Pathologists' Associate Member Section (ASCP-AMS) invites all registered medical laboratory scientists to become members. AMS officers are elected annually, with the president sitting on the ASCP Board of Directors. The ASCP-AMS conducts seminars and workshops to provide continuing education opportunities. Other professional societies are also available.

Students are made aware of the certification examination options available during the orientation week. The school provides application information for the Medical Laboratory Scientist ASCP Board of Certification exam. Information on ASCP Board of Certification exam is also available on-line on ASCP website.

Guidance Available to Students

The Program Director and Program Coordinator are available for student support and assistance regarding Program policies and practices and academic problems. Any such guidance sessions remain confidential. At Inova Fairfax Hospital we ensure the right to privacy and confidentiality by creating and maintaining a secure and trusting environment. We will treat all student information as confidential. Discussion of these matters will be restricted to situations where the information is necessary to meet the student's needs. We protect students' confidentiality by preventing the disclosure of their personal information to any unauthorized parties. In addition, we do not discuss personal matters in the presence of a student. The Medical Laboratory Science Program adheres to the Inova Health System Policy Personnel Record Confidentiality.

In addition, Inova Fairfax Hospital offers an Employee Assistance Program (EAP) at no charge. Students may confidentially contact the EAP for up to three private counseling sessions for any personal problem. Referrals for further care may be made by the EAP as necessary. The Medical Laboratory Science Program advises students to refer to Inova Health System Policy Employee Assistance Program found on Inovanet.

Employment Assistance

Prior to graduation from the Program students receive instruction on interviewing skills and preparation of resumes. Because of the nation-wide shortage of Medical Laboratory Scientists, the students have not had difficulty in obtaining employment for at least the last five years. Graduates are in demand because they have had recent training in all aspects of the laboratory and are often hired as generalists. Every effort is made to recruit the Program graduates for employment within Inova Health System. Students have access to the job vacancy listing for this laboratory as well as opportunities throughout the system.

X. Student Records

Graduation

At the end of the clinical year and upon successful completion of all program requirements, students are awarded a certificate and a pin from the Inova Fairfax Hospital School of Medical Laboratory Science Program and are eligible to sit for the National Registry Examination. Obtaining the certificate for successful completion of the program is not in any way contingent upon taking or passing the national certifying examination. A student is enrolled in a 3+1 option will receive transfer credit to their universities upon completing the program. The baccalaureate degree is awarded by their universities.

Records

Student records are maintained for admission records, evaluation, graduation records, financial records and any counseling or advising sessions. Information permanently maintained in a student record include material submitted for application to the Program, grades, evaluations submitted by Teaching Technologists for required course work, student transcripts and financial records.

After a class has graduated, the files are maintained in a secured location. Files have been maintained since the Program's inception in 1964. Files from the last ten years are secured on laboratory premises and in an electronic database with backup. All files from years prior to 2005 are secured in an Inova Health System contracted record storage facility with other official hospital records and may be retrieved as needed.

Transcripts

Transcripts are prepared at the end of the year, or at intervals as requested by the degree-granting institutions. Individual students must advise the Program Coordinator at least one (1) week in advance when transcripts are needed. Transcripts are kept on file and forwarded to affiliated universities of three-plus-one program students upon completion of the Program. The university affiliates award the Baccalaureate degrees upon satisfactory completion of the clinical year.

Students may have access to their files upon request. However, release of information to any other individual or organization is prohibited without the written consent of the student. Files are available to accrediting organizations during Program evaluation for accreditation. A list of documents maintained for graduates and enrolled students are:

- Application for admission
- College transcript showing degree earned or letter from affiliated college stating that the student will be granted a degree upon successful completion of the Program.
- Evaluation of transcript
- 2 letters of recommendation
- Physician's statement
- Evaluations from each laboratory section
- Grades from each lecture series and laboratory rotation
- Final transcript
- Financial records

Releasing Information from student files policy

It is the policy of Inova Fairfax Hospital Medical Laboratory Science program that "personally identifiable information", other than "directory information" from a student's education records, will not be disclosed to any party or organization which does not have legitimate right of access to the information without the written consent of the affected student. Husbands and wives are not entitled to obtain records of their spouses without the consent of the spouse regardless of dependency.

To obtain access to one's records, a student must advise the custodian of the records of his or her desire to examine such records. If desired, the student may also request an explanation and/or copies of such records. Examinations will be permitted under conditions that will prevent alteration or mutilation of the record. If the student believes the record content to be inaccurate, the student may submit a request to amend the record.

**INOVA FAIRFAX HOSPITAL
MEDICAL LABORATORY SCIENCE PROGRAM**

PERSONAL DAY REQUEST

I, _____,

plan to take one of my five (5) personal days off on _____.

I, _____,

plan to take off _____ to attend my college graduation. This will not count as one of my five (5) personal days off.

Signature

Date

NOTE TO STUDENTS

When requesting a day off, submit the original PERSONAL DAY REQUEST form to the laboratory rotation Teaching technologist, and give a copy to the Program Coordinator.

Inova Fairfax Hospital Medical Laboratory Science Program

2017 – 2018 Lecture Series and Laboratory Rotation

Number Of Weeks	Lecture Series
1	Orientation
6	Chemistry (Phlebotomy rotation will be at IFOH during this time, students are to return to IFH for Chemistry lecture)
3	Urinalysis
7	Hematology
4	Coagulation
1	Christmas Holiday No Lecture
2	Parasitology
6	Immunology
8	Microbiology
5	Blood Bank

Number Of Weeks	Laboratory Rotation
6	Chemistry
12	Hematology/UA/Flow
2	Coagulation
7	Blood Bank
1	Project Week
9	Microbiology
1	Inova Blood Donor Center
3	Quest Diagnostics Lab
1	Phlebotomy

Student:	Laboratory Section:
Start Date:	Finish Date:

Student Evaluation

Affective Objectives:

1 – Initiative

- Displays dependability and initiative by completing all assigned tasks promptly.
- Pursues additional educational experiences and resources.
- Seeks unsolicited tasks/ additional responsibilities.
- Looks for things to do during slack periods, such as restocking supplies & assisting others.

<u>Needs Improvement</u> Does Not Meet Standards	<u>Provisional</u> Does not consistently meet Standards	<u>Competent</u> Meets Standards	<u>Commendable</u> Above Standards
(1 pt) <input type="checkbox"/>	(2 pts) <input type="checkbox"/>	(3 pts) <input type="checkbox"/>	(4 pts) <input type="checkbox"/>

2 – Technique (at entry level)

- Performs manual & automated tests according to written procedures & instructions in an acceptable time frame.
- Works independently after instruction; recognizes problems or discrepancies & attempts to determine cause of problem.
- Recognizes and acknowledge personal limitations of knowledge and skills and seek help when appropriate
- Reports results accurately and efficiently (at entry level)
- Demonstrates the ability to follow written instructions and show attention to detail.

<u>Needs Improvement</u> Does Not Meet Standards	<u>Provisional</u> Does not consistently meet Standards	<u>Competent</u> Meets Standards	<u>Commendable</u> Above Standards
(1 pt) <input type="checkbox"/>	(2 pts) <input type="checkbox"/>	(3 pts) <input type="checkbox"/>	(4 pts) <input type="checkbox"/>

3 -- Knowledge

- Demonstrates understanding of basic theory
- Demonstrates knowledge of theory & clinical significance of laboratory tests by correctly responding to oral questioning & written tests.
- Demonstrates the ability to learn by applying and integrating data from previous disciplines to this clinical rotation to resolve problems.
- Identifies problems and errors or any malfunctions.
- Questions unusual results & verifies these through further checks and/or testing

<u>Needs Improvement</u> Does Not Meet Standards	<u>Provisional</u> Does not consistently meet Standards	<u>Competent</u> Meets Standards	<u>Commendable</u> Above Standards
(1 pt) <input type="checkbox"/>	(2 pts) <input type="checkbox"/>	(3 pts) <input type="checkbox"/>	(4 pts) <input type="checkbox"/>

**INOVA FAIRFAX HOSPITAL
MEDICAL LABORATORY SCIENCE PROGRAM
LABORATORY EVALUATION**

4 -- Organization

- Maintains a clean and orderly work area
- Complies with institutional safety policies and procedures
- Completes lab assignments in a timely fashion
- Exhibits ability to multi-task
- Restocks reagents and supplies

<u>Needs Improvement</u> Does Not Meet Standards	<u>Provisional</u> Does not consistently meet Standards	<u>Competent</u> Meets Standards	<u>Commendable</u> Above Standards
(1 pt) <input type="checkbox"/>	(2 pts) <input type="checkbox"/>	(3 pts) <input type="checkbox"/>	(4 pts) <input type="checkbox"/>

5 -- Professionalism

- Maintains professional appearance and department according to the Inova Fairfax Hospital personnel policy and the Medical Laboratory Science Program dress code guidelines. Wears ID badge properly at all times.
- Is an ambassador of the organization, promoting a positive image of Inova. Does not gossip. Serves as a peer role model to others exhibiting standards of behavior at all times.
- Is accountable for whereabouts at all times. Always arrives on time and remains in the department for the scheduled period. When arriving late, calls to provide as much notice as possible.
- Adjusts to changing workflow and staffing when necessary.

<u>Needs Improvement</u> Does Not Meet Standards	<u>Provisional</u> Does not consistently meet Standards	<u>Competent</u> Meets Standards	<u>Commendable</u> Above Standards
(1 pt) <input type="checkbox"/>	(2 pts) <input type="checkbox"/>	(3 pts) <input type="checkbox"/>	(4 pts) <input type="checkbox"/>

6 -- Confidentiality and Privacy

- Demonstrates conscientious attitude toward patient confidentiality and the importance of accurate and precise patient results.
- Understands and practices HIPAA privacy regulations.
- Protects the privacy of other students and laboratory employee's by preventing the disclosure of their personal information to any unauthorized parties.

<u>Needs Improvement</u> Does Not Meet Standards	<u>Provisional</u> Does not consistently meet Standards	<u>Competent</u> Meets Standards	<u>Commendable</u> Above Standards
(1 pt.) <input type="checkbox"/>	(2 pts) <input type="checkbox"/>	(3 pts) <input type="checkbox"/>	(4 pts) <input type="checkbox"/>

7 – Integrity / Personal Responsibility

- Is accountable for assigned work and follows policies and regulations as it applies to this rotation.
- Always willing to accept any task and then follows it through to completion.
- Exhibits ethical behavior.
- Demonstrates integrity by admitting to mistakes or errors and repeating questionable results.
- Seeks advice when necessary.

<u>Needs Improvement</u> Does Not Meet Standards	<u>Provisional</u> Does not consistently meet Standards	<u>Competent</u> Meets Standards	<u>Commendable</u> Above Standards
(1 pt.) <input type="checkbox"/>	(2 pts) <input type="checkbox"/>	(3 pts) <input type="checkbox"/>	(4 pts) <input type="checkbox"/>

**INOVA FAIRFAX HOSPITAL
MEDICAL LABORATORY SCIENCE PROGRAM
LABORATORY EVALUATION**

8 – Quality Safety

- Follows established safety and infection control procedures.
- Practices error prevention techniques and reports all safety hazards, accidents and incidents promptly and completely.

<u>Needs Improvement</u> Does Not Meet Standards	<u>Provisional</u> Does not consistently meet Standards	<u>Competent</u> Meets Standards	<u>Commendable</u> Above Standards
(1 pt.) <input type="checkbox"/>	(2 pts) <input type="checkbox"/>	(3 pts) <input type="checkbox"/>	(4 pts) <input type="checkbox"/>

9 – Interpersonal Relationships and Attitude

- Displays a pleasant, positive attitude & is easy to work with.
- Demonstrates acceptance of advice & constructive criticism by not repeating mistakes.
- Communicates and maintains cooperative relationships with instructors, fellow students and coworkers.
- Offers sound suggestions for improvement instead of complaining
- Considerate when sharing equipment and supplies.
- Demonstrates self-control, tact and respect for others in classroom and clinical setting.
- Is positive and receptive to change.

<u>Needs Improvement</u> Does Not Meet Standards	<u>Provisional</u> Does not consistently meet Standards	<u>Competent</u> Meets Standards	<u>Commendable</u> Above Standards
(1 pt.) <input type="checkbox"/>	(2 pts) <input type="checkbox"/>	(3 pts) <input type="checkbox"/>	(4 pts) <input type="checkbox"/>

10 – Attentiveness

- Pays attention to instructions.
- Is alert, attentive and enthusiastic.
- Contributes to discussions and ask relevant questions.

<u>Needs Improvement</u> Does Not Meet Standards	<u>Provisional</u> Does not consistently meet Standards	<u>Competent</u> Meets Standards	<u>Commendable</u> Above Standards
(1 pt.) <input type="checkbox"/>	(2 pts) <input type="checkbox"/>	(3 pts) <input type="checkbox"/>	(4 pts) <input type="checkbox"/>

OVERALL PERFORMANCE ASSESSMENT

Total Points	Divided by	Performance Expectations Total Points	=	Score
	/	40	=	

Score	Multiply by	Weight	=	Overall Performance Rating Score
	x	100%	=	

FINAL LABORATORY EVALUATION GRADE _____

DATE _____

MEDICAL LABORATORY SCIENCE PROGRAM LABORATORY ROTATION

COURSE CONTENT & INSTRUCTOR EVALUATION

- | | | |
|--|---|---|
| <input type="checkbox"/> BLOOD BANK | <input type="checkbox"/> HEMATOLOGY LAB | <input type="checkbox"/> PHLEBOTOMY |
| <input type="checkbox"/> CHEMISTRY LAB | <input type="checkbox"/> DONOR CENTER | <input type="checkbox"/> QUEST |
| <input type="checkbox"/> COAGULATION LAB | <input type="checkbox"/> MICROBIOLOGY LAB | <input type="checkbox"/> URINALYSIS LAB |

Each of the following statements describes a basic aspect of the laboratory rotation and/or instructor behavior. Evaluate each one using the scale at the right. Reserve the highest score (5) for unusually effective or high quality performance and the lowest score (1) for unusually ineffective performance. Comment on any rating of 3 and below. NOTE: The term "instructor" applies to all technologists who teach, coach, mentor, tutor and/or in some way provide training to students during this rotation.

RANGE: Low → 1 → 2 → 3 → 4 → 5 → High

- _____ Instructors in this laboratory rotation were professional role models.
- _____ Instructors were current in the theoretical and technical knowledge of the subject.
- _____ Instructors were polite to students and laboratory staff members at all times.
- _____ If a mistake was made, I was not embarrassed or humiliated by the instructors and they were always patient when offering explanations.
- _____ Instructors were fair and consistent in evaluating students; criticism given to me was constructive.
- _____ Instructors were enthusiastic about the subject they were teaching and made the course interesting. This motivated me to do my best work.
- _____ I was praised when I performed a task well.
- _____ A sufficient amount of time was given to cover the subject material.
- _____ Directions provided for each new procedure were presented in a clear and concise manner.
- _____ A sufficient amount of time was allotted to become proficient in performing a test procedure.
- _____ Theory was presented to supplement understanding the principle associated with each procedure.
- _____ Students were questioned periodically to confirm that purpose, principle and procedure were understood for each test to be learned.
- _____ I was encouraged to ask questions and was provided answers in a timely manner.
- _____ Objectives for learning were provided at the beginning of the rotation and the material covered during the rotation supported these guidelines.
- _____ In terms of both behavior and examinations, I understood what was expected of me.
- _____ My work was evaluated within enough time to allow mistakes to be corrected.
- _____ Examinations were graded and returned promptly.
- _____ The work space provided for students was adequate and distractions were kept to a minimum.

MEDICAL LABORATORY SCIENCE PROGRAM LECTURE SERIES

COURSE CONTENT & INSTRUCTOR EVALUATION

- | | | |
|---------------------------------------|--------------------------------------|---------------------------------------|
| <input type="checkbox"/> CHEMISTRY | <input type="checkbox"/> COAGULATION | <input type="checkbox"/> BLOOD BANK |
| <input type="checkbox"/> URINALYSIS | <input type="checkbox"/> HEMATOLOGY | <input type="checkbox"/> IMMUNOLOGY |
| <input type="checkbox"/> PARASITOLOGY | | <input type="checkbox"/> MICROBIOLOGY |

Each of the following statements describes a basic aspect of the course and/or instructor behavior. Reserve the highest score (5) for unusually effective or high quality performance and the lowest score (1) for unusually ineffective performance. Please comment on any rating of 3 and below. Make comments on the reverse side.

RANGE: Low → 1 → 2 → 3 → 4 → 5 → High

- _____ 1. The instructors had command of the subject and presented course material in an organized way.
- _____ 2. The instructors discussed current developments and related the lecture topics to other areas of knowledge when appropriate.
- _____ 3. The objectives for each lecture were clearly stated and the lesson material supported these objectives.
- _____ 4. The instructors were sensitive to the response of the class and encouraged student participation.
- _____ 5. The instructors were enthusiastic about the subject.
- _____ 6. The instructors made the course interesting and therefore I felt motivated to do my best work.
- _____ 7. The instructors helped broaden my interests, viewpoints and appreciation of the subject.
- _____ 8. I was encouraged to ask questions and to express my views.
- _____ 9. The lecture material was presented at a rate that allowed me to comprehend the material as it was presented.
- _____ 10. Examinations were graded and returned promptly. Instructors communicated the exam return date.
- _____ 11. Instructors were able to provide practical applications of principles as they were being presented in lecture.
- _____ 12. Questions that were asked on examinations correlated with the course objectives and course content.

**INOVA FAIRFAX HOSPITAL
SCHOOL OF
MEDICAL LABORATORY SCIENCE
SENIOR GRADE RECORD**

Student: _____ **Student Number: #** _____

Program Start Date: _____

Program End Date: _____

GRADES				
COURSE	LECTURE	LABORATORY	COMBINED	FINAL GRADE AFTER ADJUSTMENT FOR COMPREHENSIVE EXAM
Hematology				
Coagulation				
Urinalysis				
Chemistry				
Microbiology				
Blood Banking				
Immunology				

The passing grade is 70%. The lecture grade comprises 60% and the laboratory grade comprises 40% of the final grade. The Comprehensive Examination adjusts the grade by 10%. Final grade = 90 % (Lab x 40% + Lecture x 60%) + (Comp. x 10%). The passing grade for the Comprehensive Examination is established at 70%.

Amy Shoemaker, MBA, MT(ASCP), DLM
Program Director

STUDENT PROJECT GUIDELINES



STUDENT PROJECT: OVERVIEW

Early in the year the Program Director solicits possible topics for student projects from pathologists, laboratory supervisors and teaching technologists. These topics are provided to the students for consideration. All projects are submitted to the Medical and Program Directors for final approval. Generally the projects are handled in the following way:

- > **Topic Selection** - Select a topic that interests you.
You may suggest your own topic or choose one from the submitted list.
- > **Research** - Research the topic.
Read the literature available in the laboratory related to your project. Talk to the individual who submitted the topic, or if one that you selected, talk with the individuals in that area.
- > **Advisor Selection** - Select an advisor for your project.
Usually the person who suggested the project, a pathologist, section supervisor or a teaching technologist is the advisor.
- > **Writing Proposal** - Write a project proposal with the assistance of your advisor.
Have the proposal signed by your advisor and submit the signed proposal to the Medical Director and Program Coordinator for final approval of the project. NOTE: Reagents cannot be ordered without project approval.
- > **Performance** - Perform the project.
Keep notes and results of all work performed on your project. Meet with your advisor as needed.
- > **Writing Project** - Write the project in **scientific form**.
Submit the project to the Medical Director and Program Coordinator for approval after your advisor has initialed his/her approval on the final draft.
- > **Oral Presentation** - Give an oral presentation of the project.
Prepare visual aids and/or handouts. Practice the presentation prior to delivery.

The preceding seven steps are a general guideline on how to proceed with a project. Please bring any concerns or problems to the attention of the Program Coordinator.

STUDENT PROJECT: FORMAT GUIDELINES

The following format is most often used in scientific writing:

> **Title**

This is the only section that is self-explanatory. The title should be as brief as possible, but still convey exactly what the paper is about.

> **Abstract**

An abstract is an opening statement that summarizes the entire paper. This is a brief statement of five or six well-composed sentences to prepare the reader for what to expect.

> **Introduction**

This section varies in length, depending on the topic. It should include pertinent historical background, discussion of the clinical significance of the topic, advantages and disadvantages of older methodologies and the methodologies being investigated, and the reasons for doing the project.

> **Methods and Materials**

This section should include a detailed procedure and a list of reagents and equipment used along with their respective manufacturers and ordering information. This section should answer the following questions:

- How did you do the project?
- What materials did you use and where did you get them?

The Methods and Materials section should be very detailed and comprehensive because your project may be supplemented by future work.

> **Data**

This section should include all tables, graphs, histograms, formulae, etc. Include all data. Data should be presented in a legible format. Occasionally, follow-up work is done on projects by another person at a later date. It is important to have details in this section.

> **Discussion**

This section should include your conclusions about the project. It should include information about possible interfering substances, improvements that could be made in the project, recommendations for what can be done with your information and work. The statements you make about the project should be supported by the data you have presented.

> **References**

All references should be included in the bibliography. The student should consult a textbook for writing papers for the proper format.

> **Signatures of Advisor and Student**

Submit a rough draft to your advisor for approval. The advisor will point out any errors or clarifications that need to be made. When the advisor has approved and initialed the final copy, give a copy to the Medical and Program Directors.

NOTE: Allow ample time for approval.

STUDENT PROJECT: PROCESS DESCRIPTION

1. Topic Selection

Select the topic as early as possible to allow adequate time for preparing the proposal. Choose a topic that you either know about or have an interest in. If you devise your own topic, be sure to investigate the feasibility with teaching technologists and the supervisor in that section. You should discuss clinical importance, cost, equipment availability, reagent preparation, availability of specimens and an estimate of time involved to complete the project. The best source of clinical information is the pathologist. Sources for technical information include laboratory managers, supervisors, teaching technologists and the library. The project proposal must be submitted and approved prior to the winter holiday break. ***The Medical and Program Directors must approve all projects before starting.***

2. Topic Research

Perhaps the most frequent error made by students when doing projects is failure to obtain adequate background information. The first source of information available to you are your textbooks. From these books, one can usually obtain a list of references for individual papers and journals. Use the Inova Fairfax Hospital Medical Library and ask the librarians for help as needed. Another good source of information is the manufacturer or technical representatives from companies related to your project - ask them for information. When doing your literature research, take good notes and ask yourself the following questions:

- What is the clinical significance of the lab test procedure you plan to work on?
- What are the current methodologies for the test?
- What are the drawbacks and pitfalls of the previous methods?
- What are the advantages of the different methodologies?
- If patient specimens are needed, are they available?
- Can this project be done in the time I have available?

3. Advisor

Your advisor may be a pathologist, section supervisor, teaching technologist, or a hospital physician. It is important that you keep your advisor informed on the progress of your project. After finding an advisor, discuss all aspects of the project listed in Step 1 in selecting a topic. Your advisor will be able to help you anticipate time and material needs for the project. ***Thoroughly discuss your project with your advisor!***

Let your advisor know what your deadlines are. Do not expect your advisor to accept the first draft of the proposal you submit. You may be asked to re-think, re-do, and re-submit. Work out a time schedule with your advisor that allows you sufficient time. Both you and your advisor should keep in mind that the proposal initialed by the advisor is like a contract. Subsequent work can be done in a future project.

4. Writing a Proposal

Before any project can be started, a written proposal must be approved, first by your advisor and then by the Medical and Program Directors.

The proposal need not be lengthy but must contain some vital information. It should be typewritten and signed by you and your advisor. A copy of the signed proposal is then submitted to the Medical Director and Program Coordinator for final approval. A copy of your proposal will be retained in your file. The Program Coordinator can provide sample project proposals from former students as examples.

STUDENT PROJECT: PROCESS DESCRIPTION (Continued)

Include the following information in the proposal:

- Title
- Historical Background - A brief statement about your project's relevance to a particular disease state, diagnosis, treatment, etc. All information should be documented with proper footnotes. The IFH Library has books on writing scientific papers.
- Principle of the method(s) you will investigate.
- List of materials needed - equipment, reagents, etc.
- Number and types of samples you plan to analyze.
- Length of time you expect to spend on the project.
- Estimate of total cost of the project.

Basically, the primary objective of the proposal is to provide evidence to support the decision to perform the project. To accomplish this, the project needs to have some clinical significance, offer better method for analysis or provide data on currently used methods.

You should exhaust the laboratory's many resources before ordering any new materials. Consult section supervisors about reagents and equipment availability. If you find that we do not have the required material, investigate different companies and compare prices. Prices for reagents may vary. Your advisor or section supervisor will help you with the cost information.

No equipment or materials should be purchased prior to approval.

When all the vital information is organized into a good format, submit it to your advisor for approval. Once the Medical and Program Directors have approved the project proposal, supplies may be ordered. Your advisor or department supervisor will assist you in ordering.

Laboratory reagents must be labeled with the date of receipt and stored under proper conditions. Ensure that your reagents are stored properly and note the expiration date. Material Safety Data Sheets will be provided by the manufacturer for your reagents and must be on file in the laboratory section.

5. **Project Performance**

The following are general guidelines to help you perform your project accurately and safely:

- Consult your advisor.
- Do not try to do your project in a brief period of time.
- Read the Material Safety Data Sheets and follow all safety guidelines when dealing with chemicals. Know the hazards of each and use personal protective equipment and engineering controls along with good work habits.
- When handling any biological materials, follow the OSHA Blood Borne Pathogens Standard and the Exposure Control Plan. A copy of this is available for you in each lab section and from the Program Director. Follow all safety and infection control policies.
- Plan and organize your work.

STUDENT PROJECT: PROCESS DESCRIPTION (Continued)

- Take extensive notes while you are doing your project.
- Ask questions. The laboratory has many knowledgeable sources. If they do not know the answer, they can direct you to the correct source.
- Run as many samples as possible, being sure to include the different categories that you outlined in your proposal.
- Think about your results and use your reasoning abilities.
- If your project does not turn out as anticipated, all is not lost. Proving that something does not work or is not cost-effective is equally as important in laboratory science as proving the contrary.

6. Writing a Project

Most scientific papers follow a standard format with some variations. Care should be taken to reference all sources with the proper documentation of footnotes and a bibliography.

Personal computers are available for students to prepare their projects. Check with the Program Director for availability and locations of computers for student use.

7. Oral Presentation

In the process of performing your project and writing the paper, you have thoroughly researched and learned information about your topic. Now you must prepare yourself to communicate effectively what your project involved. Prepare yourself to report on what you did, why you did it, what the outcome was and what you learned in the process.

- Organize your thoughts for the presentation by preparing notes on index cards. Reading your paper is not acceptable.
- When possible, prepare visual aids and/or handouts.
- Practice your presentation in the classroom with the Program Director, your classmates, or your advisor in advance. Remember that you are now the expert on this topic. Knowing this should give you a feeling of confidence during the presentation.
- The oral presentation should not include the detail that you were required to include in your written paper. Summarize. Following your presentation, ask if there are any questions. Your advisor will be available to help with answers.
- In concluding, acknowledge help you received from your advisor or other individuals.

NOTE TO STUDENTS

Completion of this program and permission to sit for the Registry examination is contingent upon completion and presentation of the student project.