Introduction

The faculty of the Rochester General Hospital Clinical Laboratory Technology Program is pleased to welcome you and wish you a challenging, productive, and successful professional year.

We realize that you must have many questions regarding the program and it is the intent of this Student Handbook to answer most of these. If, after reading it, you still have any unanswered questions please feel free to contact the Program Director. Also, we would appreciate any suggestions regarding information that is not presently included in this Handbook that you feel would be helpful to future students.

The Handbook will also provide you with detailed information with regard to what will be expected of you as a student, policies that you will be responsible for following, some of the many resources available to you, and other types of general information. It is expected that you will read this handbook and become familiar with its contents.

This year is likely to be an experience unlike any other you have encountered thus far. The amount of material you will master is large, and yet this is just a minimum! Take every opportunity to read independently, utilize your excellent textbooks, answer study problems and questions, and immerse yourself in the fascinating world of clinical laboratory science.

Once again we welcome you and wish you much success in your endeavor to become a professional member of the health care team.

Nancy C. Mitchell, M.S.,
M.T. (ASCP), DLM
Program Director, Clinical Laboratory Technology Program

Programmatic Accreditation Status

The Rochester General Hospital Clinical Laboratory Technology Program is accredited by:

National Accrediting Agency for Clinical Laboratory Sciences
5600 N. River Rd., Suite 720
Rosemont, IL  60018

Phone 773-714-880
Fax 773-714-8886
Email: info@naacls.org
www.naadls.org
Laboratory Telephone Numbers
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Program Mission:

To provide an excellent education to men and women in the profession of clinical laboratory science/medical technology, enabling them to become valuable members of the health care team and to contribute to high quality patient care. Graduates shall also be able to seek careers in related activities such as research and development, industry, biotechnology, and academia.

Program Goals

In addition to the above, the Program shall strive to meet benchmarks as established by the National Accrediting Agency for Clinical Laboratory Sciences:

- Three years consecutive result of graduate certificate rates demonstrating an average of at least 75% pass rate on the ASCP BOC examination, for those who take the exam within the first year of graduation.
- Three years consecutive results of graduation rates demonstrating an average of at least 70% of students who have begun the final half of the Program go on to successfully graduate from the Program.
- Three years consecutive results of graduate placement rates demonstrating that an average of at least 70% of respondent graduates either find employment in the field or a closely related field (for those who seek employment) or continue their education within one year of graduation.
Program Philosophy

The Rochester General Hospital's Clinical Laboratory Technology Program was founded in 1934 for the purpose of educating young men and women in the profession of Medical Technology/Clinical Laboratory Technology. The Program believes that:

1. The accreditation requirements of the National Accrediting Agency for Clinical Laboratory Sciences shall be met in both letter and in spirit.

2. Student selection shall be predicated on the premise of recruiting the best possible students available based on both academic and personal factors. The admission policy will follow an open system as opposed to a one that is closed reserving specific numbers of positions to affiliated schools. This allows for the recruitment of competent individuals who had made late vocational choices to enter the field of Clinical Laboratory Science as well as provide positive career alternatives to individuals unable to enter medical or dental school.

3. The planned curriculum in the Program is primarily an educational experience in preparation for a professional career. Thus, in addition to the acquisition of specific knowledge and skills through conventional teaching methods, the student will be exposed and expected to acquire skills, attitudes, and habits which are generally common to all professionals in the medical field. These include understanding the patient as a complete human being who presents himself with a disease, and keeping confidential all information as well as respecting all other patient rights. Finally, to go through a transition from a pure educational academic environment of a college student and acquire proper work patterns, habits and attitudes to change him/her to a competent professional employee.

4. The student must complete a 12 month program to gain the proficiency required of a clinical laboratory technologist.

5. A ten week Introduction to Clinical Laboratory Science component is an essential preparatory experience prior to departmental rotations. This provides for didactic background and technical skills to facilitate and augment teaching experience during the departmental rotations. It also provides for the opportunity to learn certain technical, especially manual, and other methods not provided during the divisional rotations.

6. Instruction in both theoretical and practical aspects of Transfusion Medicine, Hematology, Urinalysis, Biochemistry, Microbiology, Immunology, clinical correlations, management skills and Phlebotomy is essential for the development of the professional technologist.

7. The students shall work in groups to investigate a problem in laboratory management and will present their findings in oral form to the faculty, fellow students, and laboratory team members. In addition, the students shall work in pairs and perform a regulatory tracer in one area of the laboratory, presenting their summarized conclusions in written form. This provides an opportunity for students to become familiar with some of the managerial aspects of running a large laboratory as well as the regulatory environment inherent in all laboratories. It provides an opportunity for the student to practice both written and oral communication skills.

8. The student will be familiar with various types of quality control programs, including extramural proficiency sample programs promulgated by regulatory agencies such as New York State Health Department and the College of American Pathologists. The student will be become familiar with the responsibilities of a licensed professional in the State of New York.
9. The student shall be able to introduce, evaluate, and validate new laboratory procedures involving changes in methodology as well as equipment.

10. The student shall be able to establish, evaluate, and monitor laboratory safety procedures involving both general areas of safety such as fire and handling of caustic material but also areas of biological safety, disposal of contaminated material used in the laboratory as well as general occupational safety procedures.

11. The student shall be familiar with and participate in a staff development and continuing education program within a clinical laboratory and to gauge its scope in relation to the needs of such laboratories.

12. The student shall be familiar with laboratory management including the optimal utilization of personnel, equipment, and management of supplies and budget.

13. The Program shall provide a supply of well-educated clinical laboratory technologists to meet regional and national manpower requirements as well as serve as a step to higher levels of educational achievement such as categorical Ph.D. programs in the various disciplines of clinical laboratory sciences.

14. The Program will provide the stimulus for an academically oriented laboratory atmosphere thus aiding in the recruitment and retention of a high caliber professional staff with interest in education as well as patient care. This will assure a higher level of professional attainment for the entire staff and lead to better patient care.

15. Upon successful completion of the educational program at the Rochester General Hospital's Clinical Laboratory Technology Program, the student shall be awarded a certificate of completion from the Program and a baccalaureate degree from his/her college or advanced certificate, thus becoming eligible and educationally competent to take the certifying examinations given by the ASCP Board of Certification as well as other certifying or licensing examinations for clinical laboratory technologists. Credit hours for the clinical year are awarded by and posted on the official transcript by the student's college. Currently the BOC Certification Examination serves as the licensing exam for the NYS Department of Education in our professional licensure category.
ENTRY LEVEL COMPETENCIES

The graduates of the Rochester General Hospital Clinical Laboratory Technology Program are expected to fulfill exacting career entry-level expectations. The important role of clinical laboratory medicine in the healing arts demands that graduates comprehend their position as a member of the health care team, exhibit understanding and empathy for patients, and function as professionals in the laboratory environment.

Description of the Clinical Laboratory Science Profession

The medical laboratory scientist is qualified by academic and applied science education to provide service and research in clinical laboratory science and related areas in rapidly changing and dynamic healthcare delivery systems. Clinical laboratory professionals perform, develop, evaluate, correlate and assure accuracy and validity of laboratory information; direct and supervise clinical laboratory resources and operations; and collaborate in the diagnosis and treatment of patients. The clinical laboratory professional has diverse and multi-level functions in the areas of analysis and clinical decision-making, information management, regulatory compliance, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed, or performed. Clinical laboratory professionals possess skills for financial, operations, marketing, and human resource management of the clinical laboratory. Clinical laboratory professionals practice independently and collaboratively, being responsible for their own actions, as defined in the profession. They have the requisite knowledge and skills to educate laboratory professionals, other health care professionals, and others in laboratory practice as well as the public.

The ability to relate to people, a capacity for calm and reasoned judgment and a demonstration of commitment to the patient are essential qualities. Communications skills extend to consultative interactions with members of the healthcare team, external relations, customer service, and patient education.

Medical laboratory scientists demonstrate ethical and moral attitudes and principles that are necessary for gaining and maintaining the confidence of patients, professional associates, and the community. 1

Description of Career Entry of the Clinical Laboratory Scientist/Medical Technologist

At entry level, the medical laboratory scientist will possess the entry level competencies necessary to perform the full range of clinical laboratory tests in areas such as Clinical Chemistry, Hematology/Hemostasis, Immunology, Immunohematology/Transfusion Medicine, Microbiology, Urine and Body Fluid Analysis and Laboratory Operations, and other emerging diagnostics, and will play a role in the development and evaluation of test systems and interpretive algorithms.

The medical laboratory scientist will have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed or performed.

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

A. Application of safety and governmental regulations and standards as applied to clinical laboratory science;
B. Principles and practices of professional conduct and the significance of continuing professional development;
C. Communications sufficient to serve the needs to patients, the public and members of the health care team;
D. Principles and practices of administration and supervision as applied to clinical laboratory science;
E. Educational methodologies and terminology sufficient to train/educate users and providers of laboratory services;
F. Principles and practices of clinical study design, implementation and dissemination of results. 1

Professional Code of Ethics

The Professional Code of Ethics at the Rochester General Hospital Clinical Laboratory Technology Program is designed to promote individual responsibility and integrity and to develop an atmosphere conducive to professionalism and scholarship. It is the responsibility of each student to maintain the honesty and integrity of his/her own work. If a student observes another engaging in as violation of the Code of Ethics, it is the observer’s responsibility to take appropriate action to uphold the integrity of the Code. This may include notification of faculty or supervisors for serious or repeated infractions.

Students in the Rochester General Hospital Clinical Laboratory Technology Program shall hold the welfare of the patient and the trust of the physician inviolate.

1. Information relating to patients must be held in strict confidence. All patient information is confidential.
2. Students shall not be reporting patient results; all patient results will be reported by the instructing technologist under his/her own individual login. Student may be working with patient material in concert with the instructor, or in a mirror-image situation, or in a specifically designed testing scenario.
3. Patient safety, in all respects, must be ensured.

Students in the Program shall be willing to accept responsibility for their own work and results.

1. If the assigned task exceeds the student’s knowledge or ability, assistance must be requested without hesitation or reluctance.
2. Increased efficiency and quality of work must be strived for through thoroughness and care.
3. Knowledge must be gained and expanded through continuing education.

The standards of the Professional Code of Ethics shall be upheld.

1. The Standards shall apply to classroom work, examinations, projects, laboratory work, and laboratory employment experiences.

Students shall assume a professional manner both in conduct and attire.

1. In dealing with other members of the class, members of the laboratory staff, physicians, and patients, the student shall conduct him/herself in a helpful, considerate, and cooperative professional manner.
2. The rules of personal safety as they apply to laboratory activity shall be adhered to at all times.
3. The safety of other persons in the laboratory work environment shall be a continual concern.
4. The dress code shall be adhered to.
CLINICAL LABORATORY TECHNOLOGY PROGRAM DRESS CODE

A dress code is justified and necessary for the following two reasons:

Proper clothing is essential for the safety of the student as well as others who may come in contact with them; thus protective clothing to prevent personal injury or contact with potentially infectious material are both required by various regulatory agencies as well as prudent medically.

Our appearance, both in terms of clothing and personal grooming is important in patient care and to our profession. Individuals who have direct contact with hospitalized or ambulatory patients are viewed and judged by them as representing the health care team. Thus, whether rightly or wrongly, our competence as professionals is often judged solely on the basis of our appearance. Outlandish appearance or unprofessional conduct will engender lack of confidence and insecurity to the patients thus negatively affecting their recovery. Furthermore, personnel not in direct contact are often seen by ambulatory patients as well as relatives of the patients leading to the same reactions and judgments.

Laboratory Addendum to the RGH Appearance Policy is listed below. This is in effect at all sites the students populate:

Shoes: closed shoes, protective in nature for all areas and divisions of the laboratory. Crock type shoes are acceptable (recommended with heel straps) and cloth shoes are acceptable. Stockings of socks must be worn with all footwear in concert with the Hospital dress code. Open-toed sandals are not acceptable.

This applies to all areas of the department including Chemistry, Hematology, Microbiology, Transfusion Service, Histology/AP, Cytology, Lab Administration, Specimen Management, Transcription, Client Services, Couriers, and Lab Support (both Rochester General Hospital and ACM Laboratories).

White Uniform Pants: can be worn with either business casual clothing on top, or if opting to wear a scrub top, top must be burgundy.

Scrubs: Laboratory personnel may opt to wear scrubs if there is a high probability of their own personal clothing being contaminated with infectious agents or reagents/chemicals. Scrubs must be burgundy. The preferred vendor is Empire Uniform.

Scrubs are NOT allowed in clerical areas and other areas of the laboratory where such contamination of clothing would not occur.

The Hospital Appearance Policy was distributed in the Incoming Student Packet and may be found on the RRH Portal, Administration >> Policies>>> Appearance Policy (SOP 3).
Advanced Placement/Competency Advancement

Advanced placements and competency advancement are not offered as options within Introduction to Clinical Laboratory Science or within the clinical rotations or divisions.

The only area where competency advancement is practiced is during the Phlebotomy rotation. Phlebotomy is a skill that may be demonstrated to the satisfaction of the Phlebotomy Supervisor, should a student wish to do so. If deemed proficient to perform routine adult phlebotomy, the student will be relieved of being in Phlebotomy for the week’s rotation.

However, the student must be within the Department during that week, involved in other academic pursuits. This is not an opportunity to take a week off, go on vacation, or not be present.

Record Retention

Student records are retained indefinitely in a locked, secure location. The Program Director holds the keys to the locked files, which are kept secure. Records shall include transcripts, final grades and evaluations, in addition to materials required for admission, evaluation, counseling or advising, individual grades and credits earned.

Following graduation, a student may request a signed, official transcript to be sent to an address provided. A written request is required, including the student’s full name (maiden if applicable), social security number, and class year. There is no fee for sending a transcript.

Grievance/Appeals Procedures

Both Academic and Non-Academic

I. Introduction

It is understood that for reasons of fair play, legal requirements of due process, as well as for better interpersonal relationships within Program, clearly defined routes for addressing real or perceived grievances must be spelled out. Nevertheless all possible grievance circumstances cannot be envisioned and therefore written procedures covering all possible occurrences cannot be delineated. The grievance procedures must remain flexible so that they can be, when necessary, adapted to the need at hand.

The grievances specifically can involve a single student or may present problems involving the majority or all of the members of a class. Consequently, grievance procedures have been evolved to reflect both of these needs.

II. Individual Grievance/Appeals Procedures: Academic and Non-Academic

A. The conflict of grievance should be, whenever possible, resolved at the initial source of contact. If the problem arises at the level of the technologist, then appeal along the customary chain of command to the laboratory divisional Manager, the Program Director, and the Program’s Medical Director can be made. This progression should occur only in instances wherein the grievance is not resolved to the satisfaction of the parties concerned.

B. In the event that the grievance is unresolved, the student has the right to appeal to the Faculty Council for airing and may appear in person to present his/her case.
C. The above grievance sequence exhausts the resources of the Clinical Laboratory Technology Program, however, the student can seek further appeals outside of this body. In case of further dissatisfaction, the areas of other appeals are:

1. Executive Director of the Hospital.
2. The program director of the affiliated College, where applicable.

D. An example of a specified area of action is grade appeal:

1. First appeal to the individual giving the grade.
2. Second appeal to the grader’s divisional Supervisor and Manager.
3. Thirdly to the Program Director or Program’s Medical Director.

III. Group Grievances/Appeals

When group grievances occur, the following are the grievance procedures available.

A. Two class-elected representatives can discuss the problem with the director of a clinical division, the Program Director or the Medical Director.

B. The two class representatives may bring up the problem either during regularly scheduled or if the problem is of significant magnitude, a special meeting of the Faculty Council.

C. The students as a whole can provide input and point out areas of grievances during questionnaires completed at intervals throughout the Program year, and follow-up questionnaires to past graduates.

D. The group, through its representatives, may appeal unresolved grievance procedures to outside sources.

IV. To Initiate a Grievance/Appeal

A. Complete the Grievance/Appeal form (copy included here).

B. Provide a copy to the technologist instructor if applicable, and a copy to the Program Director.

C. Student should keep a copy for him/herself as well.

D. The Program Director shall coordinate the process of bringing individuals together for airing of the complaint, resolution, and/or additional appeals as needed.
Grievance/Appeal Form

Your Name:  

Date:

Please describe your grievance or appeal. Include specific dates, occurrences, and names of pertinent individuals so follow-up can take place (attach additional sheets if necessary):

What actions have taken place thus far to attempt to resolve this (if any)?

What would you consider to be a fair resolution of your grievance and/or appeal?

Copy to: Program Director __  Instructor __  Yourself __

Student Signature : ________________________________
ATTENDANCE AND SICK TIME

The internship year prepares students to become professional members of the health care team. The year is very different from being a college student on campus where one may leave the premises and come and go at will.

The student is expected to be present for all lecture and practicum experiences within the Program unless he/she is ill. The student should expect that the day will be a full shift long, and the student will not normally be leaving early. **The student should plan on being present until 4 PM or until dismissed.**

The student will be present within their laboratory Division until dismissed for the day by their teaching technologist. The technologist will determine if the student has met the teaching goals and activities that need to be completed on that day.

Please note that the student may be required to make up lost hours from rotation, either before 9:00 am, after 4:00 pm, or free time on Wednesdays following lecture. Each division has objectives of required work that must be completed and should a student fall behind, this may be required.

During the year, the student will be granted 3 sick days and 2 personal days. For advance scheduling of the personal days, the Request for Personal Day form will need to be submitted and signed by the Program Director. The 2 personal days will not be granted to extend vacations or weekends. Any sick time above and beyond the 3 sick days will require a valid physician’s slip.

Should a student be in a division where instrument problems or other impediments occur during the rotational day, he/she can use online educational resources, do required study questions, use educational CD’s or other media, use the Werner Health Sciences Library, and so on. There are always myriad activities to be completed in the interim until instrument malfunctions are corrected.

Failure to adhere to attendance expectations may result in dismissal from the Program.

**Illness:** The student must call the Division they are assigned to, as well as the Program Director, when ill. The student is granted 3 sick days in the Program, however if the student is ill he/she must notify as above. Work missed while out sick may need to be made up.

**Exams:** If a student misses an exam because of illness, he/she will be taking the exam immediately upon his/her return.

**Timeliness:** The student is expected to be here on time in the morning. Exact start times may vary depending on lecture start times and rotation start times. Educational experiences are usually structured in advance, and the technologist cannot wait for a student who is habitually late.

*Failure to correct habitual tardiness problems after appropriate counseling has been carried out may result in dismissal from the internship Program.*

**Snow Days:** Snow days as such do not exist. As members of the health care team the student is expected to be present. The student should make every attempt to be present. If this is impossible the student must notify the Program Director.
Doctors Appointments: Appointments at the doctor, dentist, and the like should be made either first thing in the morning, or last appointment of the day. This minimizes disruption during the internship day.

Interviews/College Graduations: Especially at the end of the year, students may have job interviews scheduled at various times during the day. These absences are usually sanctioned since this allows the student to complete the job application process. Some students may travel to attend their college graduation. The student may wish to use the 2 personal days granted during the year, for these purposes. A request for use of a personal day must be signed by the Program Director in advance.

Personal days are not meant for the purpose of extending vacation breaks or legal holidays.

Social Events: Social events are not considered valid reasons for being absent. Consult with the Program Director if necessary.

The student must receive the advanced approval of the Program Director for any absence during the internship year. Attempting to obtain time off from the Program from a teaching technologist or other instructor in the absence of seeking the approval of the Program Director is not sanctioned.

Abuse of the policy will result in counseling by the Program Director and, in the instance of repeat offenses, notification of the home college advisor and Academic Dean if necessary. Dismissal of the student from the internship may take place if the problem behavior is not corrected.
Request for Personal Day

During the year, the student will be granted two personal days, over and above the usual vacation time and days off granted as part of the year.

This form must be submitted in advance and signed by the Program Director and the Manager of the laboratory section involved.

The Program Director will place the signed request in the student’s permanent record.

Note: personal days are not to be used to extend usual vacation time or other days off granted during the year (Memorial Day, July Fourth, and so on).

Personal Days are typically used for job interviews, college graduation, and so on. Students are urged to save these personal days specifically for those purposes.

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Student Name: ________________________________

Date of Request: ________________________________

Date of Personal Day Requested: ________________________________

Signature of Laboratory Divisional Manager: ________________________________ Date:

Signature of Program Director: ________________________________ Date:
**Emergency Medical Care**

Should the student require medical care for a situation which would normally be considered a medical emergency, he/she may go or be taken to the Emergency Department at Rochester General Hospital, located on the Ground Floor down the hallway from the Laboratories. If the individual is not ambulatory, instructors may call 2-4444 and call a Blue Alert, at which time the Crash Cart from Emergency Department will be immediately deployed to the laboratories or other location as required.

If the student requires an office visit for a situation less acute than an emergency situation, Lifetime Health maintains an emergicenter/After Hours Care office in the Wilson Building on the Rochester General Hospital campus.

Costs related to insurance co-pays, hospital fees if any, lab tests, radiology studies, and the like, are the financial responsibility of the student him/herself.

While at the ACM Laboratory (Elmgrove) location, should an emergency arise, instructors may call 911 for assistance and the student may be transported to the Emergency Department at Unity Hospital or Rochester General Hospital. From ACM, the Unity Hospital is by far the closest location. Another potential location is the Emergency Department at University of Rochester Medical Center.

**Criteria for Program Progression**

Students must pass with a score of 70% or higher (C):

* All practicum rotations (average of practicals, rotational exams, presentations, study questions, etc)
* The practical examinations given within each rotational division
* The final weighted average in each discipline. That includes the rotational average, lecture exam average, and final exam score if applicable.
* The Transfusion Service written final exam. This will require a second, revised Final Exam after appropriate review and remediation.

Students must be graded as “high” or “Middle” for all items on the Affective Domain Objective and Evaluation form in each discipline. If for some reason an item is graded “low”, the student must work to improve that score in the rotation and be graded as such.

In this Handbook near the end is a sample of the Affective Domain Objective and Evaluation form, as well as a detailed breakdown of how grades are determined in the Program. This is also reviewed in detail during Orientation in August.

**Probation**

The Program does not utilize probation. Students are counseled and encouraged if having difficulty, with additional instruction if required. The student is kept appraised of their academic standing and should the time arrive when it is arithmetically impossible for the student to pass all rotations and practicals with a “C” or higher, then the student would be released from the Program.

Fortunately this situation arises extremely rarely. Once aware of an academic issue, students will almost invariably increase effort and academic commitment.
Suspensions

Continuous monitoring of student's academic and professional performance usually leads to an early discovery of deficiencies. This results in intensive counseling by heads of the clinical divisions, the Program Director, or the Medical Director. Suspensions as such are not invoked in this Program since this removes the student from the required educational experience and, should the time exceed one week, may preclude the individual from meeting the requirements for Program completion. Repetition of inadequate bench-side performance, or reexamination in areas of failure may be invoked.

Dismissals

All dismissals of students are at the recommendation of the Faculty Council and must be approved by the Director.

A. Academic: The first of the two major in depth reviews of the student's performance occurs at the end of the first ten weeks, Introduction to Clinical Laboratory Science. Dismissal can be invoked at this point for gross academic failure such as failing a major divisional discipline and/or overall unsatisfactory academic performance.

During the laboratory rotations unsatisfactory performance after repeated counseling and failure to repair leading to a failing grade in any major clinical division is an adequate reason for recommendation to the Faculty Council for dismissal.

B. Non Academic

Gross, deliberate professional misconduct as willful endangering of patients' welfare, "dry labbing" or conduct of a criminal nature such as use of narcotic drugs, etc. is an adequate non academic reason for recommending dismissal. As outlined above, the students’ due process for resolving this grievance is outlined.

Failure to improve problem behavior revolving around tardiness, absence, abuse of the attendance policy, and the like, may result in dismissal from the internship program.

Reinstatement

Students who have been dismissed for gross academic failure will not be granted reinstatement for the current academic year. During the course of the highly structured, 12-month internship program no opportunity exists for such a student to repeat any portion of the Program which he/she failed previously.

If a student is dismissed for academic failure, he/she may be extended an appointment in the following year's class upon recommendation of the Faculty Council and Program Officials if there is sufficient reason to believe that the student would do well academically if another opportunity were given. Such an opportunity would be undertaken in concert with the appropriate officials at the undergraduate college or university.

Deliberate professional misconduct, such as willfully endangering patients' welfare, "dry labbing", or conduct of a criminal nature such as use of narcotic drugs, etc., is not in concert with the Program's Professional Code of Ethics. Students dismissed on such basis will not be reinstated.
Honor Code

The Professional Code of Ethics at the Clinical Laboratory Technology Program is designed to promote individual responsibility and integrity and to develop an atmosphere conducive to professionalism and scholarship. The Code of Ethics shall apply to all facets of the Program. It is the responsibility of each student to maintain the honesty and integrity of his/her own work. If a student observes another engaging in a violation of the Code of Ethics, it is the observer's responsibility to take appropriate action to uphold the integrity of the Code. This may include notification of faculty or supervisors for serious or repeated infractions. The Code of Ethics and the honor code shall apply to all facets of the Program, including classroom work, examinations, projects, laboratory work, and laboratory employment experience.

All examinations in the Program are closed book unless the student is notified otherwise by the examiner. Books and notes may not be consulted during examinations under closed book conditions. Concrete evidence of violation of the code of ethics may result in immediate dismissal from the Program.

Concrete evidence of cheating may result in immediate dismissal from the Program. Examples of activities that would represent a violation of the code of ethics in the Program include, but are not limited to:

- Accessing or possessing prior exams, study questions, practical questions, and other program assessment materials.
- Failure to do own work – copying the work of others on exams, study questions, practicals, and other assessments.
- Attempting to access instructor’s files which may contain test questions, answer keys, and so on.
- Utilizing books, notes, study materials during exams and practicals that are closed-book.
- Leaving the room during exams and practicals for the purpose of referring to books or other reference materials
- Texting during exams or practicals, or using such technology to obtain answers or exchange information.

Weapons Policy

Rochester General Hospital and the Clinical Laboratory Technology Program have a no-weapons policy. No employee or student is allowed to carry or possess any weapon while on the premises. If found with a weapon, the weapon will be confiscated and disciplinary action will be taken.
Outside Service Work

Work in the Laboratories outside of the normal educational experience is not required, and is totally voluntary on the part of the student. Such compensated employment experiences are paid, and usually occur on weekends, early mornings, or evenings in specimen management or phlebotomy (license not required). This policy regarding service work applies to all locations within Rochester Regional Laboratories as well.

In all cases the Program urges the student to strongly consider limiting work to 8-10 hours per week. It has been seen that academics might suffer if the student attempts to work more than 10 hours per week.

The Program monitors student progress carefully. If the student is employed by the Laboratory and academic problems become evident, the student will be urged to cut back on working hours, and indeed the Department may take the initiative to cut the student’s hours.

Regular Program hours do not extend into evening or weekend hours, and instruction does not occur at those times.

If employed by the Laboratories during the internship experience, the student must schedule time off with his/her Supervisor, regardless of the academic calendar maintained by the Program.

Tuition and Withdrawal Procedure

Tuition is payable in two installments. The first payment, usually half the tuition balance, is due no later than mid-October. The remaining balance is due no later than mid-March of the following year (second semester). The tuition figure stands at SUNY undergraduate tuition and will mirror any increases therein.

The Program’s probationary period is the first three months. Withdrawal from the Program during this three month probationary period will not entitle the student to any refunds for tuition due for the first half of the Program, but the second half of the tuition due will be waived. The first half of tuition is still due should the student withdraw before paying the first half of tuition during that three month period.

Withdrawal: Notification of withdrawal at any point in the program requires a formal letter of withdrawal signed by the student him/herself and must include the effective date of withdrawal. The withdrawal letter shall be submitted to the Program Director. If the student is a matriculated undergraduate, his/her on-campus advisor must be kept informed of this action as well. If a student withdraws during the first ten weeks of the program (Introduction to CLS), the first half of tuition is still required to be paid and will not be refunded, however the second half of the tuition payment will not be due (as above).

Guidance and Advising

Guidance is available to assist students in understanding and observing program policies and practices, for advising on professional and career issues, and for providing counseling or referral for personal and financial problems that may interfere with progress in the Program. Confidentiality and impartiality is maintained in dealing with student problems.
The Program Director maintains an open door policy regarding students and any issues that may arise. Student may approach the Program Director, or one of the other faculty members if they feel more comfortable doing so.

If the issue is an academic one, the “Need for Improvement” form is filled out and included in the student’s file after the student has reviewed and signed it. The student has the opportunity to add comments to the form as well.

The student also has the option of discussing any matter with the Pastoral Care chaplains, rabbis, and representatives of all major faiths and denominations. Additionally, 3+1 students usually have the option of visiting counselors on their own home campuses if they wish.

The RRH Employee Assistance Program is available for students in the Program as well, regardless of the nature of the issue, be it personal, academic, or financial. The student may access the EAP through the Dept of Human Resources at Rochester General Hospital.

As indicated earlier, all student records are kept locked and are confidential.

Performance of Procedures Under Qualified Supervision

Within the Program students will be instructed and supervised at all times by qualified instructors. Students will be handling and working with patient specimens in a “mirroring” situation or will be working with specimens that have already been analyzed and resulted. In no instance will a student be allowed to analyze and result patient specimens even under supervision.

Student Liability Coverage

As of the first day of the Program, students must provide the Program Director with proof of liability coverage as well as documentation that the coverage is equal to at least $1,000,000.00 per incident and $3,000,000.00 aggregate.

It is the student’s responsibility to select one of the following companies and arrange for insurance:

HPSO [www.hpsso.com](http://www.hpsso.com)

Marsh [www.proliability.com/professional-liability-insurance/students#](http://www.proliability.com/professional-liability-insurance/students#)

The cost of such insurance is extremely reasonable.

Student need to send a photocopy of the coverage showing the amount of liability no later than the first day of the program. If such evidence of coverage is not provided, the student may not continue in the Program.
Essential Functions

The following are Essential Functions that the student must meet, with or without reasonable accommodation, in order to be in applied status at the Rochester General Hospital Clinical Laboratory Technology Program. The applicant must have sufficient:

1. **visual acuity**, either normal or corrected, in order to safely and accurately perform patient testing. For example, a student must be able to identify microscopic structures, operate analytical instruments safely and accurately, identify organisms, and differentiate fine detail.

2. **psychomotor skills** with sufficient hand-eye and fine motor coordination/manual dexterity to fulfill the technical requirements of the Program and the profession. For example, the student must be able to obtain and manipulate specimens, reagents, instruments, and analytical equipment, use pipeting equipment, and computers with speed, accuracy, and precision in a manner that does not endanger others.

3. **intellectual and cognitive abilities** to comprehend, calculate, reason, analyze, synthesize, integrate, and apply information. For example, the student will be required to take written, oral, and practical examinations, complete assignments and exams on time, orally present a formal project presentation, write a project report, use computers, and perform a variety of laboratory activities.

4. **academic initiative** to work independently, in small groups, and as a member of a team. For example, a student will be expected to take initiative in asking questions, performing required work in the practicum, participating in class discussions, working as a member of a problem-solving team, and performing as colleagues with their professional counterparts in the laboratory.

5. **ethical standards** to demonstrate adherence to patient confidentiality, the academic and professional code of ethics, and honesty in all his/her work and conduct.

6. **communication skills** to communicate in English effectively and efficiently both verbally and in writing. The student must be able to effectively instruct patients if required. Students applying whose college course work and/or degree has taken place at other than an accredited American college or university must demonstrate English language competency (see Catalog).

7. **emotional health and flexibility** to work in a fast-paced, stressful environment. For example, the student may be exposed to instrument noise, emergency situations, several persons working in his/her immediate vicinity, unpleasant odors or sights, pathogens, and blood and body fluids.

8. **behavioral maturity** to enable him/her to interact with peers, faculty, the public, and other members of the health care team effectively and respectfully. The student must be willing to take instruction from the faculty respectfully. For example, the student will be interacting with fellow students, faculty members both in lecture and on practicum, as well as coming into contact with nurses, physicians, nursing unit technicians, phlebotomists, and others both in person and on the telephone if required. In the Phlebotomy rotation the student will be interacting with the public. Instructors will correct students in order to aid in instruction.

9. **Independent judgment/critical thinking skills** necessary to problem solve, make clinical decisions regarding the flow of testing, recognize critical values, and apply algorithms.

Internet and e-Mail Policy

In accordance with the Rochester General Health System policy on the use of e-mail and the Internet, including using the computers in the Werner Health Sciences Library, use of e-mail needs to be restricted to messages related to school-related topics and activities. Personal e-mail to friends and associates is not sanctioned. Use of the Internet is limited to projects and topics that are school related. Use of the Internet to look up sports scores, to go to favorite hobby sites or web sites, etc. is not sanctioned. Likewise, personal calls especially long distance toll calls, are not to be placed from Hospital telephones.
**Health Services**

A physical examination by a physician is required of all students before entering the Program per NYS law. However, care for serious injury or medical emergencies is provided through the Emergency Department. The student may incur a co-pay depending on which insurance they carry, for visits to Emergency. All students are required to carry adequate health insurance while in the Program. Documentation of such is required before the first day of the internship.

For medical care that is not as urgent, Lifetime Care maintains an Emergicenter/After Hours Clinic in the Wilson Medical Building on the campus of Rochester General Hospital. Students are responsible for any co-pays or other costs associated with care depending on which insurance they carry.

**Completion of All Required Work**

All required work within each Division must be completed by the end of the individual rotations. Failure to do so will result in points being deducted and may also result in the reduction of an entire letter grade within that particular division. This includes completion of mandatory study questions and exams within each rotation. These study questions are meant to reinforce and coordinate with work being done in rotation; students should do them in “real time” as they are completing each divisional rotation. They are all due at the conclusion of each rotation. Exams to be taken within rotations are to be completed by the time the student leaves that rotation.

**Textbook Reading**

All rotations including Introduction to Laboratory Science require textbook reading and comprehension. The bulk of the exam material in the lecture series is comprised of both lecture material and textbook reading; all of this is testable. Students must not simply use a review book or search the Internet for content regarding a specific topic and think this is sufficient. Texts offer in-depth background and medical relevance; **STUDENTS MUST READ THE TEXTBOOKS. Note: We use your textbooks to formulate exam questions and study questions so you need to use your textbooks too!**

**Cell Phones, Tablets, Electronic Devices**

Students are expected to not utilize these while in the laboratory. Not only does this distract the student from instruction, but the Laboratory is a blood and body fluid area and as such contamination of these devices can occur. New York State Dept of Health Clinical Laboratory Evaluation Program has regulatory standards restricting these items from blood and body fluid areas.

**Clinical Assignments**

Students will complete the Introduction to Clinical Laboratory Science portion during the first 10 weeks of the Program as a group, with several instructors. After this experience is concluded students will embark upon 40-week General Rotation, covering all disciplines in the Laboratory.

The Class will be divided into three groups, with each group beginning their General Rotation clinical assignments in a different area of the Laboratory. Over the course of the 40 weeks, student groups will rotate from one area of the Laboratory to another. Within each discipline, sub-schedules will be devised by the student coordinators in order for all members of the group to cover all sub-areas within each laboratory division.
The General Rotational grid will be provided by late Sept/early October in draft form, in order to give students and instructors a chance to provide feedback to the Program Director. The final rotational grid will be published before General Rotation begins.

The vast majority of the clinical year will take place at Rochester General Hospital, with a few weeks taking place at ACM Laboratories in Gates, NY, our sister laboratory within Rochester Regional Health.

An example of the Annual Schedule, as well as a sample General Rotation grid, are included within this Handbook near the end.
Responsibilities of Licensed Professionals in New York State

We are licensed professionals in New York State. As such, the NYS Department of Education has developed a summary of responsibilities as below. These may be found at the NYS Department of Education Website, Office of the Professions. It is our responsibility to be aware of these as below and behave accordingly:

Unprofessional conduct in the practice of any profession licensed, certified, or registered ….. shall include the following:

a. Willful or grossly negligent failure to comply with substantial provisions of the Federal, State, or local laws, rules, or regulations governing the practice of the profession;

b. Exercising undue influence on the patient or client, including the promotion of the sale of services, goods, appliances, or drugs in such manner as to exploit the patient or client for the financial gain of the practitioner or of a third party;

c. Directly or indirectly offering, giving, soliciting, or receiving or agreeing to receive, any fee or other consideration to or from a third party for the referral of a patient or client or in connection with the performance of professional duties;

d. Permitting any person to share in the fees for professional services other than a partner, employee, associate in a professional firm or corporation;

e. Conduct in the practice of a profession which evidences moral unfitness to practice the profession;

f. Willfully making or filing a false report or failing to file a report required by law or by the Education Department, or willfully impeding or obstructing such filing, or inducing another person to do so;

g. Failing to make available to a patient or client, upon request, copies of documents in the possession of under the control of the licensee which have been prepared for and paid for by the patient or client;

h. Revealing of personally identifiable facts, data, or information obtained in a professional capacity without the prior consent of the patient or client, except as authorized or required by law;

i. Practicing or offering to practice beyond the scope permitted by law, or accepting and performing professional responsibilities which the licensee knows or has reason to know that he or she is not competent to perform, or performing without adequate supervision of a licensed professional, except in an emergency situation where a person's life or health is in danger;

j. Delegating professional responsibilities to a person when the licensee delegating such responsibilities knows or has reason to know that such person is not qualified, by training, by experience, or by licensure, to perform them;

k. Performing professional services which have not been duly authorized by the patient or client or his or her legal representative;

l. Advertising or soliciting for patronage that is not in the public interest (false, fraudulent, guaranteeing any service, making claims to professional services not substantiated by license, etc).

m. Offering bonuses or inducements in any form other than a discount or reduction in established fee or price for a professional service or product.

Professional misconduct is defined in Education Law and in the Rules of the Board of Regents. Professional misconduct includes the following:

- Engaging in acts of gross incompetence or gross negligence on a single occasion, or negligence or incompetence on more than one occasion

- Permitting or aiding an unlicensed person to perform activities requiring a license

- Refusing a client or patient service because of race, creed, color, or national origin

- Practicing beyond the scope of the profession

- Releasing confidential information without authorization

- Being convicted of a crime

- Failing to return or provide copies of records on request
Property of RGH CLT Program

- Being sexually or physically abusive
- Abandoning or neglecting a patient in need of immediate care
- Performing unnecessary work or unauthorized services
- Practicing under the influence of alcohol or other drugs
## Length of Program in Clock Hours

The RGH Clinical Laboratory Technology Program consists of 51 weeks, as delineated below. Slight alterations may take place from year to year based on faculty and student comments and recommendations.

### Orientation:
- 16 hours (2 days)

### Rotations and Introduction to CLS:

<table>
<thead>
<tr>
<th>Rotation</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Histology</td>
<td>8 Hrs (1 day)</td>
</tr>
<tr>
<td>Blood Bank Student Lab</td>
<td>64 Hrs (8 days)</td>
</tr>
<tr>
<td>Coagulation and Phlebotomy</td>
<td>16 Hrs (1 Day each topic)</td>
</tr>
<tr>
<td>Clinical Chemistry Student Lab</td>
<td>64 Hrs (8 days)</td>
</tr>
<tr>
<td>Hematology/Urinalysis Student Lab</td>
<td>120 Hrs (15 days)</td>
</tr>
<tr>
<td>Microbiology Student Lab</td>
<td>104 Hrs (13 days)</td>
</tr>
<tr>
<td>Blood Bank Student Lab</td>
<td>64 Hrs (8 days)</td>
</tr>
<tr>
<td>Phlebotomy</td>
<td>40 Hrs (1 Week)</td>
</tr>
<tr>
<td>Histology</td>
<td>80 Hrs (2 Weeks)</td>
</tr>
<tr>
<td>Hematology Rotation</td>
<td>200 Hrs (5 weeks)</td>
</tr>
<tr>
<td>Microbiology Rotation</td>
<td>400 Hrs (10 weeks)</td>
</tr>
<tr>
<td>Transfusion Service Rotation</td>
<td>200 Hrs (5 weeks)</td>
</tr>
<tr>
<td>Clinical Chemistry Rotation</td>
<td>400 Hrs (10 weeks)</td>
</tr>
<tr>
<td>Symposium Week</td>
<td>40 Hrs (1 week)</td>
</tr>
<tr>
<td>Community Generalist Lab Experience</td>
<td>8 hours (1 day)</td>
</tr>
</tbody>
</table>

### Management Module:
- 40 Hrs (1 Week)

### Review Week:
- 40 Hrs (1 Week)

### Wrap-Up Week:
- 40 Hrs (1 Week)

### Vacation Time:
- 120 Hrs (3 Weeks)
CLINICAL CHEMISTRY
Course Syllabus

I. Course Goal:

A. To acquaint the student with a variety of techniques and determinations utilizing an array of laboratory instrumentation and techniques. Topics covered include current instrumentation, computerization and interface, acid-base balance, proteins, steroids, enzymes, RIA and special chemistry, toxicology, carbohydrates, lipids, electrophoresis and immunochemistry as well as other general topics in Chemistry.

B. To help the student acquire a background of knowledge concerning the topics above and relate them to health and disease states.

C. To ensure the student develops skills and techniques in order to perform adequately in the laboratory.

D. To familiarize the student with preanalytical factors and postanalytical factors that affect patient results.

II. General Information

A. Intro to Clinical Chemistry - 8 Days

B. Clinical Chemistry Laboratory - 400 clock hours (10 weeks)

C. Credit – 9 semester hours

III. General Description:

A. Introduction to Clinical Chemistry

1. The 9 days spent in the Student Laboratory is designed to acquaint the student with some of the large variety of techniques and determinations carried out in the clinical biochemistry laboratory.

2. The time is divided between:
   a. Formal lectures on such varied subjects as pipetting, spectrophotometry, automation and statistics.
   b. Open discussion and classroom work in problem solving, L/S ratio for prediction of respiratory distress syndrome, glucose tolerance tests, hepatitis, and immunology among others.
   c. Laboratory procedures for glucose, BUN and CPK analysis, thin layer and gas chromatography.

B. Clinical Chemistry Laboratory

The ten week rotation through the main clinical laboratory acquaints the student with all the techniques and procedures used in this laboratory for analysis of blood, urine and other body fluids. The student is also expected to understand the theory behind the analysis used and the clinical and biochemical correlation between these analyses and the physiology/pathology of the individual. Pre-and-post analytical factors are included in instruction at the procedure level. To this end, a considerable amount of reading is essential, in addition to the 30-35 lectures given in the program.

IV. Course Outline

A. Introduction to Clinical Chemistry - lecture and laboratory work

1. Pipetting, basic spectrophotometer, dilution

2. Absorption and standard curves

3. Glucose tolerance test

4. BUN and creatinine

5. CPK

6. Laboratory mathematics

7. Toxicology

8. Automation

9. Screening procedure for detecting drug abuse

10. L/S ratio in amniotic fluid
11. Electrophoresis
12. RIA
13. Cholesterol
14. Hepatitis
15. Quality Control
16. Statistics
17. Osmolality
18. Immunology
19. Salicylates and acetaminophen

B. Clinical Chemistry Laboratory
1. Main Lab/Automation and STATS - total of 2 weeks
   a. 1 week in Automation - serum
   b. 1 week in Automation - urine
2. Specials ½ week
3. Stats ½ week
4. Immunoassay - 2 weeks including blood lead analysis
5. Electrophoresis – 1 week
6. Toxicology – 1 week
7. Immunology - 1 week
8. Team Week – 1 week
9. Practical Examination - 1 week

C. Lectures
1. Carbohydrates 2 lectures
2. Non-Protein Nitrogen 2 lectures
3. Protein - 3 lectures
4. Hemoglobin - 2 lectures
5. Ca, Phos, Parathyroid
6. Electrolytes - 2 lectures
7. Acid-Base Balance - 4 lectures
8. Gastrointestinal
9. Liver - 2 lectures
10. CSF
11. Kidney - 4 lectures
12. Radioimmunoassay
13. Pituitary - 2 lectures
14. Thyroid - 2 lectures
15. Adrenal and Steroids
16. Fertility and Antifertility
17. Enzymes - 2 lectures
18. Lipids
V. Evaluation

Written Exam
Lecture Exams: Carbohydrates, Acid/Base, Proteins, Cardiac, Renal/Bone, Hemoglobin/Toxicology, Endocrinology, Cardiac
Comprehensive final lecture exam – end of lecture series
Section Exams within Chemistry Rotation:
Automation/Main Laboratory
Imunochemistry
Toxicology
Electrophoresis
Immunology
STATS

Practical Exam
Testing may include manual and instrumental procedures on specimens that may involve urine, semen, CSF, and/or whole blood. The types of procedures required will vary in terms of laboratory section, methodology and instrumentation.

Weighting
Lecture Exams: 40%
Rotational Exams (30%) Practical (10%) 40%
Written Final Exam on Lecture Series: 20%

VI. Textbooks and Laboratory Manual
A. RGH Laboratory Manual, Clinical Chemistry Procedure Manuals
B. Phlebotomy Notes by Strasinger, 1st Edition
B. Burtis and Ashwood, Tietz’ Fundamental of Clinical Chemistry – 7th Edition

Revised: 4/17
HEMATOLOGY  
Course Syllabus

I. Course Goal:
   A. Regular Hematology
      1. To acquaint the student with theoretical and practical knowledge concerning Hematology procedures. This covers current instrumentation and computerization, routine hematological procedures, both routine and specialized coagulation procedures, bone marrow aspiration techniques, examination and preparation of blood smears, and special hematological stains and procedures.
      2. To develop skills and techniques necessary to perform procedures noted above.
      3. To relate the topics above to health and disease states.
      4. To familiarize the student with preanalytical factors and postanalytical factors that affect patient results (see below as well in Phlebotomy).
   B. Differentials
      1. To recognize and identify normal and abnormal cell morphology
      2. To acquire skills and techniques involved in microscopy and differential counting.
   C. Phlebotomy: One week during Hematology rotation.
      1. To acquaint the student with importance of correct patient identification, routine and specialized specimen handling techniques, and use of phlebotomy equipment.
      2. To familiarize the student with venipuncture techniques, primarily routine adult variety. This will be demonstrated by the student through successful completion of a minimum of 50 venipunctures.
   D. Advanced Coagulation: One week during Hematology rotation. Goal is to acquaint the student with both routine and special coagulation procedures. Special procedures include those used to diagnose hereditary bleeding disorders, platelet function disorders, aggregation studies, in conjunction with the RGH anti-coagulation team

II. General Information
   A. Introduction – 120 Hrs (15 Days)
   B. Hematology Laboratory - 200 clock hours (5 weeks)
   C. Credit – 7 semester hours

III. General Description:
   A. Regular Hematology - Introduction
      Background, theory and methods of basic procedures in Hematology
      1. Formal lectures
      2. Laboratory procedures
      3. Open discussion and practice
   B. Differentials - Introduction
      Study of normal and abnormal blood cells. Group instruction and discussion of projected kodachrome slides. Each student is provided with a set of blood films for individual microscopic study.
   C. Hematology Laboratory Rotation
      Students work on a one-to-one basis with their instructors. There is some review of Introduction material. Students are expected to perform all procedures done in this department, and to correlate theory, physiology and pathology with these procedures.

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D. Phlebotomy: The student will spend one complete day in the classroom during Introduction becoming familiar with adult phlebotomy. The student will then spend one week during the Hematology rotation working one-on-one with an instructing phlebotomist either at the Hospital outpatient drawing site, or at a satellite location.

IV. Course Outline

A. Regular Hematology Introduction - Lecture & Lab
   1. WBC counts
   2. RBC counts
   3. Hematocrits
   4. Hemoglobinometry
   5. Indices
   6. Blood smears - making and staining
   7. Platelet count
   8. Special stains
   9. Sedimentation rate
   10. Coagulation
   11. Spinal fluid and other body fluids
   12. Maturation of WBC and RBC

B. Differentials – Introduction:
   1. Kodachrome presentation
   2. Microscopic study of blood films

C. Hematology Laboratory Rotational Experiences:
   1. Specials 1
   2. Specials 2
   3. Diluting
   4. Differentials
   5. Advanced Coagulation
   6. Phlebotomy

D. Lectures
   1. Introduction to Humoral Immunity
   2. Introduction to Anemia
   3. Iron Metabolism/Iron Deficiency Anemia
   4. Sideroblastic Anemia
   5. Anemia of Renal Disease/EPO
   6. Megaloblastic Anemia I
   7. Megaloblastic Anemia II
   8. Aplastic Anemia/Graft vs. Host Disease
   10. Hemochromatosis
   Intracorpuscular Defects
15. Anemia Associated with Other Disorders: Infection, Connective
   Tissue, Malignancy, Renal Disease, Liver, Alcoholism
16. Introduction to White Cell Disorders
17. Multiple Myeloma and Plasma Cell Disorders
18. Introduction to Leukemias/Acute Leukemias (2 hrs)
19. Myelodysplastic Syndromes (2 hrs)
20. Chronic Leukemias (2 hrs)
21. Myeloproliferative Disorders (2 hrs)
22. Lymphomas I
23. Lymphomas II
24. Flow Cytometry

Coagulation Series:
1. Introduction to Thrombosis and Anti-Coagulation Therapy I
2. Introduction to Thrombosis and Anti-Coagulation Therapy II
3. Thrombosis and Anti-Coagulation Therapy III

V. Evaluation
A. Introduction: - 10% of final grade. Composition of the 10% is as follows:
   1. Hematology - 10% - written final exam
   2. Differentials - 10%: Kodachrome Exam - 1/3
      Written Diff Final - 1/3
      Practical Diff Final - 1/3

B. Hematology Rotation - 40% of final grade
   1. 5 written exams
   2. Hematology case study grade and practical grades

C. Hematology lectures - 40% of final grade

D. Coagulation - 10% of final Hematology grade

E. Phlebotomy - Pass/Fail. No formal grade given.

VI. Texts:
1. Hematology Procedure Manuals
3. Strasinger, Urinalysis and Body Fluids Edition 6 – Brandon/Hill
4. Phlebotomy Notes by Strasinger, 1st Edition
TRANSFUSION SERVICE

Course Syllabus

I. Course Goals:
   A. To introduce the student to theoretical material concerning red cell, leukocyte, and platelet antigens and antibodies. Methods of blood component preservation and storage, handling of donors and reactions to blood components are covered. Up to date topics such as autogenic transfusions, use of computers in the Transfusion Service, and use of special components and procedures such as apheresis products and irradiation are included.
   B. To acquaint the student in the practicum with a full knowledge of routine transfusion service procedures involved in preparing blood for transfusion including typing, crossmatching, antibody screening, and identification. Special procedures such as mother/baby problems, eluates, and other techniques are included. Recent techniques and theory such as gel technology are discussed and demonstrated.
   C. To familiarize the student with preanalytical factors and postanalytical factors that affect patient results.

II. General Information
   A. Introduction – 64 clock hrs (8 days)
   B. Blood Bank Rotation - 200 clock hours (5 weeks)
   C. Credit: 4 semester hours

III. General Description
   A. Introduction:
      1. Formal lectures covering basic genetics and immunohematology theory (ABO and Rh blood groups, anti-human globulin testing, Blood Group Systems, etc.)
      2. Practicals - ABO grouping, Rh typing, direct and indirect antiglobulin testing, including antibody identification and crossmatching procedures performed by students.
      3. Open discussions of basic theories and principles covered.

IV. Course Outline
   A. Introduction:
      1. Lectures
         a. Complement
         b. Immunology/Antigen-Antibody Reactions
         c. Basic Genetics
         d. The ABO Blood Group System
         e. The Rh Blood Group System
         f. Other Blood Group Systems (Kidd, Kell, Duffy, MN, P, Ss, Li, Lewis)
         g. Direct Antiglobulin Testing
         h. Antibody Detection and Identification
         i. The Crossmatch
      2. Practicals
         a. Serological Techniques
         b. ABO Grouping
         c. Rh Typing
         d. Direct and Indirect Antiglobulin Testing
         e. Crossmatching
B. Blood Bank Rotation
   1. Grouping Section
      a. Reagent Quality Control
      b. ABO Grouping, Rh Typing, Direct and Indirect Antiglobulin Testing
      c. Work on and resolve common grouping problems
      d. Check in and process donor units
      e. Pre and post analytical factors
   
   2. Crossmatching Section
      a. Reagent Quality Control
      b. Major Crossmatch
      c. Work on and resolve common crossmatching problems
      d. Select and tag donor units for crossmatching
      e. Issue units
      f. Thaw fresh frozen plasma
      g. Pool platelet concentrates and cryoprecipitate
      h. Pre and post analytical factors
   
   3. Antigen-Antibody Studies
      a. ABO Group, Rh type, and Indirect Antiglobulin Test on Maternal Specimens
      b. Perform ABO group, Rh type, and Direct Antiglobulin Test on Baby Cord Specimens
      c. Fetal Screen Test
      d. Direct Antiglobulin Testing - Broad Spectrum and Monospecific Testing
      e. Indirect Antiglobulin Testing, both routine and MTS
      f. Panels - Routine, Enzyme, Cold, MTS, PEG
      g. Antigen Screening
      h. Elution Techniques
      i. Kleihauer-Betke Testing (Fetal Screen test)
      j. Antibody titrations
   
   4. Special Studies and Procedures Review and Exams
      a. Absorption Studies
      b. Investigation of Transfusion Reactions
      c. RBC treatment procedures
      d. Cell separations
      e. Prewarming technique
      f. Neutralization and/or Inhibition techniques
      g. DTT Treatment of serum and/or RBC's
      h. Practical Exam and Written Exam
   
C. Lectures
   1. Blood Preservation/Historical Perspectives/Lesion of Storage
   2. Blood Components I
   3. Blood Components II
   4. Donor Selection and Processing I
   5. Donor Selection and Processing II
   6. Component Preparation: American Red Cross Guest Speaker/Tour
   7. Adverse Affects of Transfusion I
   8. Adverse Affects of Transfusion II
   9. Transfusion-Transmitted Viruses
   10. Transfusion Reactions: Immediate and Delayed/Workup of Same
11. Hemolytic Disease of the Newborn I
12. Hemolytic Disease of the Newborn II – case studies
13. Review of Blood Bank Serology
14. Warm Autoimmune Hemolytic Anemia in the Transfusion Service/Workup
15. Cold Reactive Autoagglutinins
16. Warm Reactive and Drug Induced Hemolytic Anemias and Case Studies
17. HLA System
18. Parentage Testing I
19. Parentage Testing II – Case Studies
20. Quality Assurance in Blood Banking

V. Evaluation
A. Blood Bank Rotation Grade
   1. Quizzes - 15%
   2. Practical Examination - 45%
   3. Written Examination - 40%

B. Final Blood Bank Grade Determination
   1. Introduction to Blood Bank Final grade - 5%
   2. Lecture Exams - 35%
   3. Blood Bank Rotation - 40% (3 quizzes for 25%, 2 practicals for 35%, rotational Final for 40%)
   4. Blood Bank Comprehensive Final Exam – 20%

VI. Texts:
   1. Transfusion Service Procedure Manuals
   3. Phlebotomy Notes by Strasinger, 1st Edition

Revised 4/2017
MICROBIOLOGY/MOLECULAR DIAGNOSTICS

Course Syllabus

I. Course Goal:
   A. Clinical Microbiology/Molecular Diagnostics - Student Laboratory: To acquaint students with basic tools and resources of the microbiology technologist in order to prepare them for the bench applications to be practiced in the clinical laboratory rotation.
   B. Microbiology/Molecular Diagnostics: Divisional Rotation: To prepare the student for independent bench-level activity in Microbiology and Molecular Diagnostics. To develop a sense of clinical relevance in the appropriate workup of specimens, the isolation and speciation of clinical isolates, antibiotic susceptibility testing, serologic testing, and microscopic identifications.
   C. To familiarize the student with preanalytical factors and postanalytical factors that affect patient results.

II. General Information
   A. Introduction – 104 hours (13 Days)
   B. Microbiology/Molecular Diagnostics Division - 400 (10 weeks)
   C. Credit -9 semester hours

III. Course Description
   A. Clinical Microbiology/Molecular Diagnostics - Introduction
      Lectures and laboratory exercises are designed to present the properties of microorganisms as they pertain to cultural requirements, recovery from clinical materials, speciation, other special microbiologic and serologic determinations. Techniques and methodologies are stressed in the laboratory exercises.
      Principles of asepsis, disinfection, and sterilization are also presented as well as information about pre-and-post analytical factors that can affect patient results.
   B. Microbiology/Molecular Diagnostics - Division Rotation
      Rotation through the various sections are given on a one-to-one basis with a technologist at the bench level. Students work alongside the technologist, observing and practicing the everyday tasks of the bench technologist. Sufficient exposure and practice is provided to familiarize students with diagnostic bacteriology, parasitology, virology, mycology, immunoserology, antibiotic susceptibility testing, molecular diagnostics, HIV testing, semen analysis, and mycobacteriology.

IV. Course Outline
   A. Clinical Microbiology - Introduction
      1. Lectures
         a. Introduction to thinking microbiology
         b. Safety and instrumentation
         c. Preparing, staining and reading smears; aseptic technique
         d. Normal flora/nomenclature
         e. Collection, transporting, processing, and plating specimens/pre and post analytical factors
         f. Introduction to the Enterobacteriaceae
         g. Biochemical media and use of the flow chart
         h. Colony morphology
         i. Culture media; types and use of
         j. Micrococcaceae
         k. Streptococcaceae
         l. Nonfermenting Gram negative rods
2. Laboratory Exercises
   a. Aseptic techniques and isolation
   b. Preparing, staining and reading smears
   c. Biochemical media
   d. Plate media
   e. Normal flora vs. pathogens
   f. Identification of unknowns
   g. Colony morphology

B. Parasitology
   1. Lecture
      a. Protozoan Parasites (2 lectures)
      b. Nematodes
      c. Cestodes
      d. Trematodes
      e. Malaria and other Blood and Tissue Parasites (2 lectures)
      f. Parasitology Techniques
   2. Laboratory
      a. Calibration of Ocular Micrometer
      b. Examination of Formalin-Preserved Material and Stained Smears (Fecal, Blood and Tissue).
      c. Parasitology Notebook

C. Microbiology Laboratory – rotational sections
   1. Work-ups
   2. Respiratory Cultures
   3. Urines
   4. Blood cultures
   5. Steriles and Non-steriles
   6. Mycobacteriology
   7. Mycology
   8. Serology
   9. Exams and evaluations
   10. Virology
   11. Stools
   12. Urogenitals
   13. Vitek instrument
   14. PCR/Semen Analysis
   15. HIV Testing

D. Lectures
   a. Mycology - 5 lectures
   b. Parasitology - 8 lectures, 4 lab sessions
   c. Virology - 4 lectures
   d. Micrococcaceae
   e. Streptococci (2 lectures)
   f. Neisseria
   g. Enterobacteriaceae – 1 lecture
   h. Antibiotics - 4 lectures
i. Haemophilus
j. Other Gram-negative rods – 2 lectures
k. Aerobic Gram Positive Rods
l. Legionella/Bordetella, etc.
m. Campylobacter & Vibrio
n. Anaerobes – 3 lectures
o. Mycobacteria – 2 lectures
p. Spirochetes
q. Rickettsiae/Mycoplasma/Bartonella, etc.
r. Chlamydia
s. Molecular Diagnostics/PCR
t. Bioterrorism
u. Serology/Selection of Diagnostic Tests
v. Quality Testing
w. Clinical Cases – 8 lectures
x. Site Specific Infections – 5 lectures

V. Evaluation
   A. Introduction – grade folded in as part of Rotational grade (below). Practical portion and exams are part of the lecture grade.
   B. Lecture Exams – 50% of final grade
   C. Rotation – 50% of final grade (written final, unknowns, Kodachrome quizzes, practical)

VI. Textbooks and Laboratory Manuals
   A. Required Textbooks
      1. Bailey and Scott’s Diagnostic Microbiology, 14th Edition 2018
   B. Appropriate Reference Texts
      4. Microbiology Division Procedure Manuals
      5. Larone, Medically Important Fungi, 3rd Edition
      6. Phlebotomy Notes by Strasinger, 1st Edition

Revised: 4/2017
URINALYSIS

Course Syllabus

I. Course Goal:
   A. To acquaint the student with the structure and physiology of the kidney, the formation of urine and its characteristics.
   B. To develop skills and techniques necessary to perform Urinalysis procedures, both manual and automated.
   C. To correlate clinical results with various renal disease entities.
   D. To familiarize the student with preanalytical factors and postanalytical factors that affect patient results.

II. General Information
   A. Introduction – portion of Hematology student lab (15 days)
   B. Urinalysis Laboratory - 40 clock hours (1 week)
   C. Credit – 2 semester hours

III. Course Description
   A. Introduction:
      Background, theory and methods of basic procedures in Urinalysis
      1. Formal lectures
      2. Laboratory procedures
      3. Open discussion and practice
   B. Urinalysis Laboratory:
      Students work on a one-to-one basis with their instructors. There is some review of Student Lab material. Students are expected to perform all procedures done in the department, and to correlate theory, physiology, and pathology with these procedures.

IV. Course Outline
   A. Introduction - Lectures
      1. Introduction to Urinalysis and kidney function/Pre and Post analytical factors
      2. Introduction to Microscopic
      3. Protein
      4. Sugar and other reducing substances
      5. Bence Jones protein
      6. Hemoglobin
      7. Ketone bodies
      8. Bile, urobilinogen and porphobilinogen
B. Introduction – Laboratory exercises:
   1. Gross examination - pH, color, turbidity, and specific gravity
   2. Protein
   3. Sugar and other reducing substances
   4. Urine sediment - microscopic examination and kodachrome slides
   5. Ketone bodies
   6. Hemoglobin
   7. Bence Jones protein
   8. Bile, urobinogen and porphobilinogen

C. Urinalysis Laboratory Rotation: Review of renal system structure and function, routine urinalysis, microscopic examination of urine sediment, and special procedures including confirmations.

V. Evaluation
   A. Introduction - 30% of final grade
      1. Written final exam - 1/2
      2. Final practical - 1/2
   B. Urinalysis Rotation - 70% of final grade
      1. 2 written finals
      2. Practical and oral

VI. Appropriate and Required Texts:
   A. Urinalysis Procedure Manual
   B. Strasinger: Urinalysis and Body Fluids. F.A. Davis, 6th Ed.- Brandon/Hill 2014
   C. Phlebotomy Notes by Strasinger, 1st Edition

Revised: 4/17
HISTOLOGY
Course Syllabus

I. Course Goal:

A. To acquaint the student with a variety of techniques and theoretical aspects related to fixation, processing/embedding, microtomy, and staining. Immunohistochemistry shall be included as well as information concerning the more commonly encountered tissues and biopsies, such as breast tissue, prostate tissue, skin biopsies, GI specimens, colon specimens, and biopsies of the liver, to name a few.

B. To help the student acquire a background of knowledge concerning the topics above and relate them to health and disease states.

C. To ensure the student develops skills and techniques in order to perform adequately in the laboratory.

D. Aquaint the student with pre and post analytical factors that can affect patient results in anatomic pathology.

II. General Information

A. Introduction -1 Day (8 hours)

B. Histology Laboratory – 2 Weeks (80 clock hours)

C. Credit – 2 semester hours

III. General Description:

A. Introduction

1. The 1 day spent in the Introduction is designed to acquaint the student with introductory information regarding fixation, processing/embedding, microtomy, and staining.

2. The time is divided between:
   a. Formal lectures on such varied subjects as the H&E Stain, introduction to Histology, and introductory lectures about tissue types encountered.
   b. Brief hands-on introduction to the microtome, and tour of the Histology division.

B. Histology Laboratory

The two week rotation through the main Histology laboratory acquaints the student with all the techniques and procedures used in this laboratory for the fixation, processing/embedding, microtomy, and staining of tissues of various types. The student is also expected to understand the theory behind the processes used and the clinical correlation between these techniques/tissue types and the physiology/pathology of the individual. The laboratory rotation shall include lectures by pathologists treating various tissue types (see below). Pre and post analytical factors are discussed.

IV. Course Outline

A. Introduction – introduction to Histology (1 day)

1. Introduction to Histology

2. The H& E Stain – ASCP Video

3. Hands on introduction to use of the microtome

4. Tour/Introduction to the Histology Laboratory

B. Histology Laboratory:

Structured experiences In each of the following Sections:

Fixation

Processing/Embedding

Sectioning
C. Lectures
   1. Breast tissue (during student lab)
   2. Colon specimens (during student lab)
   3. Skin Biopsies
   4. Prostate specimens
   5. Needle biopsies of the liver
   6. Immunohistochemistry
   7. Other biopsies/bone decalcification

V. Evaluation

Written Exam
At the conclusion of the Histology rotation a written exam will be given.

Practical Exam
At the conclusion of the Histology rotation, a practical will be given. It will consist of:
Embedding, sectioning, and staining tissue specimens appropriately as selected by the instructor. The types of specimens will vary and may include uterine specimens, liver tissue, tissue requiring immunohistochemistry, and so on.

Weighting
1 written exam 50%
1 practical exam 50%

VI. Textbooks and Laboratory Manual
A. Histotechnology, 3rd Edition by Carson- ASCP Press

Revised: 4/2017
MANAGEMENT MODULE
Course Syllabus

I. Course Goal:
A. To introduce the student to the concepts of:
   1. Principles and practices of quality assurance/quality improvement as applied in the pre-analytical, analytical, and post-analytical components of laboratory services.
   2. Application of safety and governmental regulations and standards
   3. Principles of interpersonal and interdisciplinary communication and team-building skills
   4. Principles and application of ethics and professionalism to address ongoing professional career development
   5. Education techniques and terminology sufficient to train/educate users and providers of laboratory services
   6. Knowledge of research design/practice sufficient to evaluate published studies as an informed consumer
   7. Concepts and principles of laboratory operations including:
      a. critical pathways and clinical decision making
      b. performance improvement
      c. dynamics of health care delivery systems as they affect laboratory service
      d. human resource management to include position description, performance evaluation, utilization of personnel, and analysis of workflow and staffing patterns
      e. financial management; profit and loss, cost/benefit, reimbursement requirements, materials/inventory management.

II. General Information
A. One week (four days, M, T, Thurs, Friday) to work on the module requirements
B. Lecture Topics: Presented both during the 40 week lecture series and during the Module week
C. Credit: 2 semester hours
D. Presentation: Schedule during the month of June.

III. General Description
A. Formal lectures covering the topics of:
   1. Ethics and Professionalism
   2. Safety and Governmental Regulations
   3. Team Building and Communication
   4. Education techniques and terminology
   5. Knowledge of Research design/practice sufficient to evaluate medical literature
   6. Dynamics of healthcare delivery systems
   7. Human resource management
   8. Financial Management
   9. Leadership
B. Two projects meant to demonstrate team building, regulatory, critical pathways and clinical decision making, dynamics of healthcare delivery, financial management, among other topics.
Team Project:
Working in teams, students shall select a laboratory project or topic (introducing a new instrument or system, redesigning a laboratory section, analyzing workflow using lean techniques, designing courier service for a busy outreach program, and so on) and shall:
1. Investigate, evaluate, and formulate a 30 minute report with each team member taking a select portion of the project for presentation.
2. Formulate a conclusion or final recommendation as a group.
3. Present the report in oral form to the rest of the class, instructors, and laboratory personnel.

Regulatory Tracer:
Working individually, students shall perform one (1) patient tracer covering one NYS Laboratory Permit category in one major division of the laboratory. The tracer shall:
1. Incorporate all elements of a patient tracer as performed by a regulatory surveyor following guidelines given by the Program Director about how to perform a tracer and what is involved.
2. The student shall formulate a one page summary report outlining deficiencies uncovered during the tracer.

Deadlines: Both projects due in June.

IV. Evaluation
A. Team Project: Graded on the oral presentation, all members of the team presenting. Scale:

   “A” – material presented concisely, crisp graphics, researched thoroughly, logical conclusion well stated
   “B” – material substantially researched, information less concise, conclusion well stated
   “C” – material presented represents marginal research and effort, conclusion less well analyzed.

B. Patient Tracer:
   “A” – tracer covered all pertinent portions of pre-analytical, post-analytical, and analytical activities within that laboratory analysis/patient
   “B” – tracer covered 85% of necessary portions of the above
   “C” – tracer covered 70% of the necessary portions of above

VI. Texts/Resources:
A. Laboratory Management by Denise Harmening
B. College of American Pathologists’ Laboratory General Checklist 2016
C. NYS Dept of Health Laboratory Statutes and Regulations 11/2016
COMMUNITY SERVICE LABORATORY ROTATION
ENRICHMENT EXPERIENCE

Syllabus

I. Goal of Community Service Laboratory Enrichment Experience: For one day to expose the student to a generalist environment quite unlike the large, specialized acute care environment in which the Program is based.

II. General Information: The student will spend one day at one of the affiliated community service laboratories within the Rochester Regional Health:

   Newark/Wayne Community Hospital Laboratory – Newark, NY
   United Memorial Medical Center Laboratory – Batavia, NY
   Unity Hospital Laboratory – Unity Hospital, Long Pond Rd, Greece, NY

III. Description: During this enrichment experience, the student is expected to:

   a. Be exposed to the importance of the pre-analytical phase, such as specimen collection, identification, and accessioning. The student shall observe and if appropriate, participate under direct technologist supervision.
   b. Gain exposure to the post-analytical phase such as the reporting loop, i.e. generation of reports and the delivery of same.
   c. Observe and participate if appropriate under direct technologist supervision in a generalist environment where technologists perform testing in chemistry, transfusion service, microbiology, hematology, and urinalysis.

IV. Grading: This is not a graded experience.

Revised 6/16
**Transfusion Service Written Final Exam Policy**

In the Transfusion Service rotation, the student must demonstrate knowledge of theoretical aspects by attaining a minimum grade of 70% on the written final rotational exam. The rationale behind this policy is the fact that knowledge of Transfusion Service theory is vital to the safe selection, testing, and issuance of blood products as well as to the correct testing of patient specimens.

Failure to master such theory could have major negative patient impacts should a student be responsible for Transfusion Service activities after leaving the internship.

The weighting of the final written exam shall remain the same, i.e. 40% of the final Transfusion Service rotation grade. The rotation grade is, in turn, 40% of the final grade given in the Transfusion Service portion of the internship. A student must pass all portions of the internship year in order to be granted the certificate of completion.

**Should a student fail the final written Rotation exam:**

1. The student shall meet with their Transfusion Service instructor and review the written exam in detail, focusing on portions of theory that need extra attention.

2. At a mutually agreed upon time, the student shall take a second, shortened Transfusion Service written final exam, consisting of no more than 50 questions. The questions shall cover all areas, and the student must attain 70% or higher.

3. The original exam score shall stand, and will be the score used in figuring the final Transfusion Service rotation grade. The second exam score must be 70% or above but will not be figured into the final rotation grade. To do so would give preferential treatment to those who failed the exam the first time.

4. Should the student fail the shortened, second exam, the Transfusion Service instructor, the Transfusion Service Supervisor, the Division Head, and the Program Director shall meet to determine the next appropriate step. A recommendation will be made to the Medical Director. Each case shall be handled individually, with all necessary individual attention being made available to the student.
## GRADE DETERMINATION

**Rochester General Hospital Clinical Laboratory Technology Program**

### Clinical Chemistry

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>During General Rotation</td>
<td>6 Rotational Exams covering electrophoresis, immunology, automation, immunochemistry, toxicology, stats.</td>
<td>30%</td>
</tr>
<tr>
<td>Practical</td>
<td></td>
<td>10%</td>
</tr>
<tr>
<td>Case Studies</td>
<td>Encompasses all rotational areas within Clinical Chemistry</td>
<td></td>
</tr>
<tr>
<td>1 Practical Exam at Conclusion of Rotation</td>
<td>Testing may include manual and instrumental procedures on specimens that may involve urine, semen, CSF, and/or whole blood. The types of procedures required will vary in terms of laboratory section, methodology, and instrumentation.</td>
<td></td>
</tr>
<tr>
<td>Lecture Exams</td>
<td>8 Exams throughout the Chemistry lecture series</td>
<td>40%</td>
</tr>
<tr>
<td>Comprehensive Final</td>
<td>Covers all lecture topics.</td>
<td>20%</td>
</tr>
</tbody>
</table>

### Hematology

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hematology Student Laboratory</td>
<td>Student Lab Hematology Final Exam, Differentials, Kodachrome Exam, Written Diff Final, Student Lab Practical Exam</td>
<td>10%</td>
</tr>
<tr>
<td>Hematology Rotation</td>
<td>Includes 5 written exams, one oral and one practical grade</td>
<td>40%</td>
</tr>
<tr>
<td>Hematology Exams Based on Lecture Series</td>
<td>Includes Exams on RBC and WBC disorders, leukemias, etc.</td>
<td>40%</td>
</tr>
<tr>
<td>Advanced Coagulation</td>
<td>Coagulation Rotation Final Exam</td>
<td>10%</td>
</tr>
</tbody>
</table>

### Transfusion Medicine

**There are 3 Quizzes (grouping, crossmatching, specials), 2 practicals, and 1 written final in rotation.**

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Laboratory</td>
<td>Student Lab Final</td>
<td>5%</td>
</tr>
<tr>
<td>Blood Bank Rotation</td>
<td>Includes quizzes 25%, one practical exam 35%, and one final rotation written exam 40%</td>
<td>40%</td>
</tr>
<tr>
<td>Blood Bank Exams Based on 40 Week Lecture Series</td>
<td>Includes exams on blood components, transfusion related disease, etc.</td>
<td>35%</td>
</tr>
<tr>
<td>Comprehensive Final Exam</td>
<td>Covers all topics rotation as well as lecture</td>
<td>20%</td>
</tr>
</tbody>
</table>
Student Evaluations- Chemistry

Each student is evaluated in four different phases. The phase one evaluation is based on exams given periodically throughout the lecture series. Phase two evaluation is based on the laboratory performance during the rotation as previously outlined including written quizzes and independent case study. The third evaluation is the practical which is performed at the end of rotation. The fourth evaluation is the final comprehensive examination given after the entire lecture series. A percentage of each evaluation phase is used to determine the final biochemistry grade.

The written examinations consist of multiple choice, matching, true/false, mathematic, and essay questions with taxonomy ranges from level I to level III.

Grading Percentages:
- Lecture exams – 40%
- Rotation – 30%
- Practical – 10%
- Comprehensive final – 20%

The student will be required to successfully pass the practical exam. In the event a student receives a failing grade the student will be required to repeat the exam until a passing grade is achieved but the original grade will stand.

Any exam or homework that is handed in after the due date/time will receive an automatic ten percent deduction penalty from the original grade.

Time Allotment:
- Lecture exams - 8 am to 9:30 am
- Quizzes - one hour
- Practical exam - eight hours

Microbiology

Student Laboratory: Includes Written Exams, One Practical, Unknowns Grade Included in Lecture Av.

Microbiology Rotation: Written Rotation Final, Unknowns, Kodachrome Quizzes, One Practical 50%

Microbiology 40 Week Lecture Series Lectures cover all aspects of Clinical Microbiology 50%

Urinalysis

Student Laboratory Written Final Exam 50%, Final Practical 50% 30%

Urinalysis Rotation 2 Written Finals, One Practical, One Oral 70%

Histology

General Rotation: (1) written exam (1) practical exam 50% 50%
Management Module

Content of Group Project (completeness, depth) 50%
Presentation
Regulatory Tracers (teams of two students each) 50%

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
<th>Quality Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>97-100</td>
<td>4.3</td>
</tr>
<tr>
<td>A</td>
<td>93-96</td>
<td>4.0</td>
</tr>
<tr>
<td>A-</td>
<td>90-92</td>
<td>3.7</td>
</tr>
<tr>
<td>B+</td>
<td>87-89</td>
<td>3.3</td>
</tr>
<tr>
<td>B</td>
<td>83-86</td>
<td>3.0</td>
</tr>
<tr>
<td>B-</td>
<td>80-82</td>
<td>2.7</td>
</tr>
<tr>
<td>C+</td>
<td>77-79</td>
<td>2.3</td>
</tr>
<tr>
<td>C</td>
<td>70-76</td>
<td>2.0</td>
</tr>
<tr>
<td>F</td>
<td>below 70</td>
<td>0.0</td>
</tr>
</tbody>
</table>

The GPA is calculated using 35 semester hrs. Total grade point average may be calculated as follows: Total Quality Points / Total Credit Hrs = GPA

Policy:

a. All students are expected to maintain at least a C average (70)
b. An unsatisfactory average received in any of the following courses prevents a student from graduating: Clinical Chemistry, Transfusion Service, Hematology, Urinalysis, Microbiology, or the Management Module
Plan for Continuous and Systematic Assessment of the Program

The Program engages in continuous and systematic assessment including the following outcome measures:

<table>
<thead>
<tr>
<th>Outcome Measure</th>
<th>Frequency/Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>External certification results (ASCP BOC scores)</td>
<td>3rd Quarter of the year to include scores earned by the class that graduated in July; also in January each year which includes national means and statistics as provided by ASCP. Subscores are also examined and compared to national means and prior years.</td>
</tr>
<tr>
<td>Graduation/Attrition Rates</td>
<td>July of each year upon graduation of the class.</td>
</tr>
<tr>
<td>Placement Rates</td>
<td>Annually, after the current class has graduated.</td>
</tr>
<tr>
<td>Attrition Rates</td>
<td>Annually, after the current class has graduated.</td>
</tr>
<tr>
<td>Student Rotational Evaluations</td>
<td>At the conclusion of each clinical rotation.</td>
</tr>
<tr>
<td>Student Overall Program Evaluations</td>
<td>During the last 2 weeks of the Program.</td>
</tr>
<tr>
<td>Employer Surveys</td>
<td>January following graduation, after the graduates have been in the workplace for about 6 months.</td>
</tr>
<tr>
<td>Graduate Surveys</td>
<td>January following graduation, after the graduates have been in the workplace for about 6 months.</td>
</tr>
<tr>
<td>Adequacy of resources (instructors, space, equipment, tools)</td>
<td>At the end of each rotation, at the end of year, and in graduate surveys sent approx. 6 months after the end of the Program.</td>
</tr>
</tbody>
</table>

The items will be reviewed by the Faculty Council which meets 2-3 times during the clinical year, as well as by the Advisory Committee which meets 2 times per year. ASCP Board of Certification scores pertaining to a specific division of the laboratory will be shared in depth with chief instructors and managers within that specific area. Any comments about instructors are shared with the managers of these divisions as well.

Actions that might be taken could involve increasing instruction in a specific area, shortening or lengthening a specific rotational experience, adding a different textbook or online resource to the curriculum, adding additional lectures to the lecture series, or developing an additional review session to be presented at the end of the year. If needed, additional resources could be obtained if student evaluations indicated the need.

Results of these outcome measures are present on the agendas for the Faculty Council meetings as well as the Advisory Committee meetings. Minutes of these meetings will so document, along with any decisions or improvements implemented. Analysis of any actions taken will also be discussed and documented.
Completion of Assigned Clinical Requirements if Discontinued

In the event an academic affiliation is discontinued during the course of the clinical year, the college and the Program shall be bound by the clauses present in all academic affiliations requiring the teach-out of the current class. All the academic affiliation agreements contain a requirement that the current class be completed in order to make sure current students are able to finish their clinical program.

Program Closure

As noted above, the Program is bound by the affiliation agreement clauses that require the current class of students to be finished in it's entirety.

In the event of any precipitous Program closure, Rochester Regional Health is extremely fortunate to have within the laboratory service line (Rochester Regional Health Laboratories) seven laboratories that encompass, in aggregate, all the clinical disciplined needed to complete the clinical year. Should students be unable to complete their clinical rotations at Rochester General Hospital for some sudden, unanticipated reason, both resources and instructors are available at a combination of our within-system laboratories to accomplish the remainder of the clinical year.

Laboratories include: Rochester General Hospital, ACM Laboratories, Unity Hospital Laboratory, United Memorial Hospital (Batavia, NY), Newark Wayne Community Hospital Laboratory, Clifton Springs Laboratory, and the RGH Laboratory at Linden Oaks.

Curriculum: Student outlines and lecture material are to a great extent present on the shared computer server, accessible to both students and instructors. If instruction needed to take place at another affiliated lab, all would still have access to curriculum.

Practicum: In the event of a natural or man-made event that would preclude practicum instruction at RGH, the practica could continue as above, but the length of the Program may be extended or the rotational grid (weeks in each section) may need to be either shortened or lengthened.

Academic Affiliates: The Program would work closely in concert with the affiliated colleges to ensure that students finish up their clinical year. This might include, in extreme cases, placement within another clinical program. Students may need to repeat some material at the other program, depending on timing.

Records: Should the Program cease, permanent student records would be kept in a secure location within Rochester Regional Health in perpetuity. Instructions on the hospital website would then indicate who to contact for official transcript requests.
Sample Annual Schedule:

ROCHESTER GENERAL HOSPITAL
Clinical Laboratory Technology Program

Annual Schedule
Class of 2017

Classes Begin: 1 August 2016

Orientation and Introduction to Laboratory Medicine: 10 Weeks

<table>
<thead>
<tr>
<th>Course</th>
<th>Days</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation</td>
<td>2 Days</td>
<td>8/1-2/2016</td>
</tr>
<tr>
<td>Phlebotomy</td>
<td>1 Day</td>
<td>8/3/2016</td>
</tr>
<tr>
<td>Clinical Chemistry Introduction</td>
<td>8 Days</td>
<td>8/4-15/2016</td>
</tr>
<tr>
<td>Microbiology Introduction</td>
<td>13 Days</td>
<td>8/16-9/1/2016</td>
</tr>
<tr>
<td>Blood Bank Introduction</td>
<td>8 Days</td>
<td>9/2-14/2016</td>
</tr>
<tr>
<td>Coagulation Introduction</td>
<td>1 Day</td>
<td>10/6/2016</td>
</tr>
<tr>
<td>Histology Introduction</td>
<td>1 Day</td>
<td>10/7/2016</td>
</tr>
</tbody>
</table>

General Rotation: 10 October 2016 – July 7, 2017

Review/Exam Week: July 10 -14, 2017

Wrap-up Week: July 17-20/2017

Graduation: 21 July 2017

Holidays Observed

Labor Day: 5 September 2106 Monday
Thanksgiving: 24 November 2016 (Students also off Friday 25th Nov.)
Holiday Break: 19 December 2016- 2 January 2017 (students back in rotation Jan 3rd, Tues)
Spring Break: 17 – 21 April 2017 (Easter Sunday is April 16, 2017)
Memorial Day: 29 May 2017 –Monday
Independence Day: 4 July 2017 –Tuesday (students not off Monday)

Note: The Program adheres to Hospital policy regarding holidays observed. Changes made by the Hospital will be reflected in the School’s schedule.
Sample General Rotation Schedule: See following page:
<table>
<thead>
<tr>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
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</thead>
<tbody>
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</tbody>
</table>

*Note: The table above represents the academic calendar for the Spring 2017 semester. The dates listed are for the academic year 2016-2017.*

**Key:**
- **W** = WEEK
- **R** = Review
- **A** = Assignment
- **P** = Project
- **S** = Symposium
- **H** = Holiday

**Academic Year:**
- **2016-2017**

**Courses Offered:**
- **Economics (General)**
- **Management (General)**
- **Accounting (General)**
- **Finance (General)**

**Important Dates:**
- **Fall Semester:**
  - **Sept 1:** Start of Term
  - **Fall Break:**
  - **Nov 25:** Thanksgiving
- **Spring Semester:**
  - **Jan 16:** Start of Term
  - **Spring Break:**
  - **May 1:** End of Term

**Accreditation:**
- **CEAB**

**Student Handbook:**
- **June 2017**

**RGH CLT Program**
COGNITIVE DOMAIN EVALUATION

Name of Student: __________________________

Division: ________________________________

The Cognitive Domain deals with the area of theory and knowledge.

Grades:
Oral: ______
Practical: ______
Written: ______
_______
_______
_______
_______
_______
Final Written: ______

COURSE GRADE: ______

COMMENTS:

Instructor: ________________
Date: ________________
### Affective Domain Objectives and Evaluation Form

**Student Name:** ______________________________________  **Section:** ______________________

During the internship program, the student shall exhibit the following affective behaviors in both lecture and practicum portions of the year.

**ANY RATINGS OF “LOW” MUST BE CORRECTED. PERSISTENT “LOW” RATING MAY PREVENT STUDENT FROM GRADUATING FROM THE PROGRAM.**

<table>
<thead>
<tr>
<th>Affective Domain Objective (Taxonomy Levels)</th>
<th>High 100% Of the time</th>
<th>Middle 90-95% Of the time</th>
<th>Low Less than 90% of The time</th>
<th>Initials/Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The student will exhibit initiative by beginning work in a timely fashion without being reminded and will adhere to the attendance policy. (II)</td>
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<tr>
<td>2. The student will turn in all required work within established time frames in the Program. (II)</td>
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<tr>
<td>3. The student will exhibit dependability regarding time by being punctual. (II)</td>
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<tr>
<td>4. The student shall maintain a professional appearance by adhering to the established dress code. (II)</td>
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<tr>
<td>5. The student shall demonstrate ability to organize work. (III)</td>
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<tr>
<td>6. The student shall leave the work area clean and restocked without being reminded. (II)</td>
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<tr>
<td>7. The student shall interrelate with professional personnel, peers, or both, in a constructive, professional manner (e.g. through professional communications and effective team skills). (III)</td>
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<tr>
<td>8. When applicable, the student shall interact with patients in a professional manner (e.g., is polite, considerate, pleasant, and unhurried.) (III)</td>
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<tr>
<td>10. The student shall be responsive to professional direction (e.g. willingly follows instructions, accepts professional constructive criticism regarding work). (II)</td>
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<tr>
<td>11. The student will exhibit judgment by handling work in a logical sequence, being fully aware of own limitations, and seeking help when needed, and choosing appropriate action in absence of detailed instructions. (III)</td>
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<tr>
<td>12. The student will exhibit professional maturity by handling stressed situations calmly and efficiently (III).</td>
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<tr>
<td>13. The student respects confidentiality and does not provide confidential information when questioned by patients or other unauthorized individuals. (II)</td>
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<tr>
<td>14. The student exhibits honesty in reporting results, taking examinations, checking for mistakes, repeating questionable tests, and admitting and correcting mistakes.</td>
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<tr>
<td>15. The student shall adhere to all published safety regulations in the Laboratory.</td>
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<tr>
<td>16. The student shall assume responsibility for individual learning by expressing intellectual curiosity and demonstrating ability to work independently. (III).</td>
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<tr>
<td>17. The student shall comply with the RGH Drug Free Campus policy and the Weapons policy, keeping in mind that we are a licensed profession in the State of New York. (II)</td>
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</tr>
</tbody>
</table>

**Reference 1:** Hudson, Goodwin, Beck. “Assessment of Student Affective Behaviors in U.S. Medical Technology Programs”, Laboratory Medicine, Vol. 25 No.1 Jan. 1994 p. 27

**Comments:**

**Signature of Student/Instructor Initials:** ______________________  **Date:** ______________

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STUDENT DECLARATION

Signature of Student: __________________________________________

Date: ________________

I hereby declare that I have read the Student Handbook and understand its contents. I understand the consequences of noncompliance with all the material contained therein, including but not limited to:

- Code of Ethics (Academic and Nonacademic)
- Professional Misconduct
  - Cheating
  - Dismissal
- Program Progression/Grading
  - Dress Code
  - Honor Code
- Patient Confidentiality
- Grievance Procedure
- Attendance Policy and Sick Days
- Emergency Medical Care- Responsibility for Copays and Fees
- Repeated Tardiness
- Weapons Policy
- Drug and Alcohol policy (Drug Free Campus)
- Completion of All Required Rotational Work
- Importance of Textbook reading/required work
- Tuition Payment Policy
- Code of Conduct Statement
- Responsibilities of a Licensed Professional in NYS

Revised 6/2017
Progression In The Program

The student will receive three types of evaluation during the Program:

a. **Final GPA:** At the conclusion of the Program, the student will receive an overall grade point average for the year. This will be a weighted average of the Rotational grades and lecture exam averages. The rotational grades are determined as outlined in the Grade Determination form found earlier in this Student Handbook.

Final grades will be mailed to the college Registrars the morning of Graduation from the Program. The actual college credit will be conferred by, and posted on the college's official transcript by, the college.

b. **Psychomotor Evaluation:** Based on faculty evaluations, the student is also given an evaluation of their psychomotor objectives within each Rotation. Blank evaluation forms are included in the Handbook.

c. **Affective Evaluation:** The student is evaluated using guidelines included on the Affective Evaluation Form, a sample of which is included in the Handbook.

In all cases academic counseling is practiced. If a student is having problems on either the written didactic portion of the Program, or the practicum portion, faculty members as well as the Program Director will counsel the student and help them progress.

**Grades less than 70%** will be considered failing. An unsatisfactory grade received in any part of the Program may prevent the student from graduating. Details are in the Student Handbook under Progression.

**All required work** within each Division must be completed by the end of the individual rotations. Failure to do so will result in points being deducted and may also result in the reduction of an entire letter grade within that particular division. This includes completion of mandatory study questions within each rotation. They are all due at the conclusion of each rotation. Exams to be taken within rotations are to be completed by the time the student leaves that rotation.

I understand policies governing academic progression in the Program and how grades are determined. I have had an opportunity to ask questions.

Print Name: _________________________________________________

Student Signature: ____________________________________________

Date: __________________________________
During the professional internship year in all portions of the Program, the student will be expected to adhere to the Code of Conduct. Failure to do so may, in extreme cases, be cause for dismissal.

1. **Timeliness:** The student is expected to be on time for lecture and practicum experiences.

2. **Cell Phones:** During lectures, cell phones are to be put on vibrate mode or message-taking mode. Cell phone calls may be returned before or after lectures or on break, not during the lecture session.

3. **Ear Buds/iPODS:** These are to be removed during lecture and laboratory practicum.

4. **Pagers:** Pagers are to be put on vibrate mode so as to not beep during lecture or laboratory.

5. **Sleeping:** Sleeping during lectures will not be tolerated. Not only is the student missing valuable information, it is rude to the lecturer.

6. **Dress Code:** The dress code is meant to project a professional image. Adherence to the dress code will be enforced.

6. **Daily Attendance:** The student is expected to be present in the laboratory during the hours specified by the Division they are rotating through. The student should expect to be present until 4PM - or as determined by the Division they are in. It is important to remember that the professional internship is not a part time program nor a 4 days per week program - it is full time.

7. **Exams:** If absent for an exam, the student will take the exam immediately upon their return. A pattern of absences will not be tolerated.

8. **Communication:** Students need to check their hospital email account on a daily basis. The Program Director as well as others will communicate with the class using email in most cases. Lecture schedule changes and other important information will be disseminated via email. Program officials may also text a student if absolutely necessary.

9. **Language:** All persons in the health system including students are expected to use appropriate language at all times and refrain from swearing, using crude language, or otherwise verbalizing imappropriately. Use of foul language will not be tolerated.

10. **Drug, Alcohol, Weapons Policy:** All students must comply with the RGHS Drug Free Campus and weapons policy.

11. **Interactions:** The student will be expected to interact with instructors and faculty in a respectful fashion, which precludes argumentative or combative behavior. Failure to accept helpful correction in a respectful manner will result in counseling and if not corrected, may threaten continuation in the Program.

I agree to adhere to the Code of Conduct and have had a chance to ask questions:

Signature: _________________________ Date: ___________
Student Declaration – SAFETY

Signature of Student: ________________________________

Date: ________________________________

I have participated in the safety topics presented in Orientation and have had an opportunity to ask questions about the information presented. I understand that the entire Laboratory Safety Manual is located on the All Labs Shared Drive, under Lab Administration.

Covered:

Applicable Regulations

Chemical Exposures – routes and symptoms, First aid

Chemical splashes and first aid

Use of Fume Hoods

Chemical labeling

Chemical Spills

Biohazards and First Aid and Disposal of Biohazards

Fire Hazard, Reporting, RACE procedure, evacuation procedure

Electrical hazards, shock procedure, 2-4444

Electrical Panels, key points, location of Laboratory Safety Manual

1/2017