

Semester 1 – Fall

AMML110 - Gross and Micro-Anatomy

This course will introduce the learner to the four basic tissues and their specific morphological structures and various body systems and their specific organs and tissues. The learner will examine digitized Histology slides and will be required to annotate their collection of images. The learner will also be required to prepare an e portfolio. The Gross Anatomy will be discussed in theory only. The learner will then apply this knowledge to the Normal microanatomy of the various systems, which are discussed in detail. At the conclusion of the course, the learner will submit an e portfolio which comprises of all images taken from the digitized slides.

BAIP113 - Foundations of Interprofessional Collaboration I

The Foundations of Interprofessional Collaboration 1 (Communication) (BAIP112) provides the learner with the context for patient centered collaborative practice and introduces the student to various modes of effective communication. The learner will develop skills for effective verbal and nonverbal communication, including feedback skills and conflict resolution skills. The learner will also investigate effective team development in the context of patient centered collaborative practice.

CCML112 - Clinical Chemistry I

This course provides the learner with the basic knowledge and skills necessary for practice in a Clinical Chemistry laboratory. Lectures and tutorials will discuss the function and metabolism of proteins, carbohydrates, lipids, enzymes, and fluids and electrolytes, and their clinical significance. Laboratory sessions introduce the learner to basic laboratory equipment and techniques. Some aspects of this course require independent study. The principles and procedures mastered in this course will enable learners to perform, and understand why we perform, more advanced biochemical specimen examinations in the laboratory investigation and diagnosis of disorders of the body systems.

The course consists of theoretical and laboratory sessions. Theoretical material is presented either in instructional modules supported by tutorials or in lectures complemented by specific objectives and lecture outlines. Laboratory exercises are conducted in small groups and reinforce the theoretical concepts and emphasize safe laboratory practice. Each laboratory exercise has defined practical outcomes and a Clinical Chemistry Standard Operating Procedures (SOP) Manual will be provided. All lecture notes, marking schemes for laboratory exercises, and other relevant course material will be posted and available as required on the Blackboard Learning System website

HEML112 - Introduction to Hematology

This course provides the learner with an introduction to the basic knowledge and techniques necessary for the study of Hematology including the morphology of blood cells and the preparation, staining, and examination of peripheral blood films. Laboratory sessions introduce the learner to the use of the microscope, blood film preparation, staining and identification of blood cells. The procedures introduced in this course will enable learners to perform hematological specimen examinations used in the laboratory investigation and diagnosis of disease.

MIML113 - Microbiology and Immunology

This course provides the learner with the basic knowledge and skills necessary for distinguishing between the normal microbial flora, opportunistic microorganisms and pathogenic microorganisms. Laboratory sessions introduce the learner to techniques for isolation and identification of significant microorganisms and for measuring the products of the immune response. The learner will also be introduced to aspects of control and prevention of infection.

PPML110 - Normal and Patho- Physiology

In this foundation course, you will learn the basic principles of anatomy and physiology and begin to integrate them with the laboratory disciplines of biochemistry, histotechnology, immunology, microbiology, hematology and transfusion science. Beginning with the cell, the course will progress through the various organ systems, emphasizing the interrelationship of structure and function. Emphasis will be placed on the relationship between the body systems and how all the systems contribute to maintain normal homeostasis. This course will prepare you for the role of the laboratory scientist in the investigation, diagnosis and monitoring of disease.

Because structure and function are closely linked, the sequence of topics in PPML110 runs in parallel with AMML110.

Semester 2 - Winter

BAIP124 - Foundations of Interprofessional Collaboration II

Students enrolled in health care professions take on the roles of co-learners and co-teachers in order to learn with, from, and about each other. In interprofessional teams course participants examine the concepts of professions, professionalism, legislation and explore the issues of culture, power, ethics, health promotion, advocacy and patient education. Participants build on previous experience and strengthen their skills in self and team assessment, reflective practice, and collaboration.

HEML120 - Hematology and Hemostasis

This course provided the learner with an introduction to the basic knowledge and techniques necessary for the study of hematology and hemostasis. These include the theory of abnormal red blood cell formation and clot formation and dissolution. Laboratory sessions introduce the learner to the operation of automated cell counters and coagulation equipment as well as providing further opportunities to improve microscopy skills. The procedures introduced in this course will enable the learners to perform hematological and hemostatic examinations used in the laboratory investigation and diagnosis of anemia and bleeding disorders.

HIML110 - Introduction to Histology

This course provides the learner with an introduction to the basic knowledge and techniques necessary for the study of Histotechnology including the microanatomy of the four basic tissues and the preparation and staining of tissue specimens. Laboratory sessions introduce the learner to the use of microscope, cell and tissue recognition, fixation, embedding, microtomy, and staining. The procedures introduced in this course will enable learners to perform histological specimen examinations used in the laboratory investigation and diagnosis of disorders of the body systems

INML120 - Clinical Instrumentation

This course provides the learner with the knowledge, skills, and behaviour necessary for the performance of specimen examinations using a variety of clinical instruments. The use of lectures enhances the information delivered in first semester, specifically in the principles of light measurement, electrochemical measurement, and immunoassay measurement techniques. Quality Management and Quality Control procedures are introduced as a means of validating patient results. Laboratory sessions introduce the learner to the maintenance, operation and reporting of chartable patient results using several Clinical Chemistry instruments.

MIML121 - Applied Microbiology

This course provides the learner with the necessary tools for classifying and identifying medically important microorganisms encountered in clinical specimens. The learner will also be provided with information on the epidemiology and pathogenicity of these organisms. Laboratory sessions provide the learner with procedures and techniques for identifying bacteria, yeast and opportunistic fungi. In addition, the learner is introduced to susceptibility testing for bacterial pathogens.

VPML120 - Specimen procurement

This course provides the student with the knowledge and skills necessary for the performance of specimen collection, handling and processing, and basic troubleshooting of phlebotomy techniques.

Semester 3 – Fall

CCML240 - Clinical Chemistry II

This course provides the learner with advanced knowledge of the Digestive, Nervous, Endocrine, Musculo-Skeletal and Cardiovascular body systems. The use of lectures enhances the information delivered in APML111 and CCML111, specifically focusing on the primary disorders of each system. Laboratory sessions focus on the technical skills developed in INML120; the learner uses a variety of clinical instruments to perform relevant biochemical investigations. Learners correlate the results of these investigations with the primary disorders of each body system.

HEML240 - Hematology I

This course provides the learner with advanced knowledge of coagulation and anemias with the emphasis on haemolytic anemias. In addition, skills necessary for the performance of automated as well as manual laboratory analyses are introduced and/or reinforced. The use of lectures and tutorials enhances the information delivered in the first didactic year, specifically in the areas of morphology, thrombosis formation and electrophoresis methodology. Automated cell counter results are validated using the principles of Quality Control and Quality Assurance. Laboratory sessions introduce the learner to abnormal red cells characteristic of certain diseases and disorders.

MIML240 - Clinical Microbiology & Infectious Diseases I

This is the first of two courses that provide the learner with a survey of major infectious diseases and the pathogenic microorganisms associated with them. The material is presented by body system/anatomical site. Viral, bacterial, fungal and parasitic agents are discussed, emphasizing laboratory analyses to detect and identify clinically significant bacteria and yeast-like fungi. Diagnostic immunological techniques will be discussed.

RMIP231 – Research

This course offers an examination of contemporary issues relevant to interprofessional education and research as applied in health and education settings. The course uses

conceptual foundations of interprofessional education as a framework for articulating applied practice and research. Learners will engage in multiple education modalities for the purposes of obtaining competency in distinguishing high quality research, analyzing the steps involved in conducting a literature review and developing a research proposal. Research directions for interprofessional education and practice will be articulated in light of exiting literature and identified needs for the construction of future knowledge.

TSML230 - Transfusion Science

This course provides the learner with the basic knowledge and skills to perform the routine and investigative procedures in a clinical transfusion science laboratory. Laboratory sessions introduce the learner to blood grouping techniques, antibody investigation and compatibility testing, as well as the investigation and resolution of transfusion-related disorders such as hemolytic disease of the newborn, immune hemolytic anemia and transfusion reactions.

Semester 4 – Winter

CCML250 - Clinical Chemistry III

This course provides the learner with advanced knowledge of the Reproductive, Urinary, and Respiratory body systems. The use of lectures and tutorials enhances the information delivered in APIS110 and CCML111, specifically focusing on the primary disorders of each system. Laboratory sessions focus on the technical skills developed in INML120; the learner uses a variety of clinical instruments to perform relevant biochemical investigations. Learners correlate the results of these investigations with the primary disorders of each body system. The principles and application of Therapeutic Drug Monitoring (TDM) and Clinical Toxicology are also introduced in this course.

The course consists of theoretical and laboratory sessions. Theoretical material is presented either in instructional modules supported by tutorials or in lectures complemented by specific objectives and lecture outlines. Laboratory exercises are conducted in small groups and reinforce the theoretical concepts and emphasize safe laboratory practice. Each laboratory exercise has defined practical outcomes and a Clinical Chemistry Standard Operating Procedures (SOP) Manual will be provided. All lecture notes, marking schemes for laboratory exercises, and other relevant course material will be posted and available as required on the Blackboard Learning System website

HEML250 - Hematology II

This course provides the learner with advanced knowledge of the pathophysiology and diagnosis of infection, leukemia and other abnormal leukocyte disorders. In addition, skills necessary for the performance of manual laboratory analyses are introduced and/or reinforced. The use of lectures and laboratory sessions enhances the information delivered in the first didactic year, as well as the first semester in the second didactic year. Leukocyte morphology, and cytochemical staining results are validated using the principles of Quality Control and Quality Assurance. Laboratory sessions introduce the learner to abnormal leukocytes characteristic of certain diseases and disorders.

IPCL251 - Interprofessional Simulated Clinical

This course is designed to provide you with the necessary interpersonal and professional skills required to practice in a clinical environment. You will learn how to model your professional role within a collaborative interprofessional team while planning to optimize patient care and safety. You will have multiple opportunities to use self-reflection, exercise judgment and integrate core professional abilities in a simulated environment. Upon successful completion of this course, you will be able to apply your profession-specific and interprofessional knowledge, skills and judgment from the simulated to the clinical environment.

The learning objective at this stage in your development is to integrate your interprofessional and discipline-specific competencies in a simulated environment. As such, you are expected to behave in a professional manner as though you were in clinical practice. You will be evaluated based on higher expectations of professional performance as you transition from student to novice practitioner. Your facilitators will work with you to ensure your progress and development over time.

HIML251 - Histotechnology & Special Staining

This course provides the learner with a continuation and expansion of histotechnique, and staining theory introduced in HIML 111. Laboratory sessions introduce the learner to a variety of special stain techniques used for identifying various tissue constituents and components, both normal and abnormal as learned in the microanatomy course. The procedures introduced in this course will enable learners to perform histological specimen preparation used in the laboratory investigation and diagnosis of disorders of the body systems.

MIML250 - Clinical Microbiology & Infectious Diseases II

This is the second of two courses that provide the learner with a survey of major infectious diseases and the pathogenic microorganisms associated with them. The material is presented according to body system/anatomical site. Viral, bacterial, fungal and parasitic agents are discussed, emphasizing laboratory identification of clinically significant bacteria, and yeast-like fungi.

TSML242 - Transfusion Practices

This course provides the learner with a continuation and expansion of the theory of transfusion science begun in TSML230. While the previous course concentrated on the testing to determine compatibility of red cell products and included a large practical component, this course will explore the blood products themselves and is exclusively theory based. Students will use current web pages of the Canadian Blood Services as well as the required text to investigate the most up-to-date information on the production, management and indications for use of all components produced from blood donation. The course will be facilitated as group research and discussions regarding current practices and the benefits and risks associated with transfusion. Upon completion of this course the learner will be able to select the appropriate blood component for the conditions and appreciate the complex issues surrounding blood transfusion in Canada.

Semester 5 – Summer

CLML251 - Clinical Education I

This course provides the students with an experience in a simulated laboratory environment prior to their real Clinical Education course. The students will be assessed on specific laboratory competencies in the five Medical Laboratory Science disciplines as well as their overall readiness to attend the clinical semester. The simulated laboratory is meant to more closely resemble the typical laboratory, with regards to work volume, work flow and requirement for multi-tasking, than the laboratory sessions given throughout the previous semesters of the program. Students will be assessed on laboratory techniques as well as communication, professionalism and team work as it applies to Medical Laboratory Science

LSIP250- Leadership in Health Care

This on-line course is designed to provide you with the opportunity to discuss pertinent theories of leadership with your colleagues in order to develop leadership skills in relation to your participation in health care teams. It will provide you with a broad overview of current theories, principles and perspectives on the leadership role in an

Interprofessional environment. Dialogue, discussion & participation in the online discussion forums will enable you enhance your understanding of your role in the multiple dimensions of leadership.

Semesters 6/7 F/W

CLML361 Clinical Education II

This course provides the students with 20 weeks clinical experience in the clinical laboratory environment prior to graduation from their program and writing the CSMLS National Certification Exam. The students will be assessed on specific laboratory competencies in the five Medical Laboratory Science disciplines as well as their overall readiness to enter practice as a medical laboratory technologist. The clinical education course is meant to provide students with a more typical laboratory work volume, work flow and requirement for multi-tasking, than was provided by the simulated laboratory sessions in the previous semester. Students will be assessed on laboratory techniques as well as Michener's core abilities: communication, professionalism and team work as it applies to Medical Laboratory Science.