CSMLS SCSLM

Canadian Society for Medical Laboratory Science
Société canadienne de science de laboratoire médical

GENERAL MEDICAL LABORATORY TECHNOLOGY

Clinical Placement Blueprint

CEXM-109-B1

September 2023

For More Information

If you require more information about this process or have any questions, please contact the Certification Department at certification@csmls.org or call 1-800-263-8277.

Contents

Applicant CSMLS ID#: _____

Instructions for the Applicant

The CSMLS is contracted by eight (8) of the nine (9) Canadian provincial MLT regulatory colleges to provide services assessing the knowledge, skills, and competency of medical laboratory technologists for entry-to-practice prior to regulatory registration.

Individuals who have been assigned a learning plan may fulfil it with a clinical placement supervised by a certified/regulated laboratory professional. All clinical placements **MUST** be **pre-approved** by CSMLS **BEFORE** one can begin.

The Clinical Placement Blueprint (CPB) describes the specific activities individuals with an assigned CSMLS learning plan will need to successfully complete under direct Canadian laboratory supervision by a certified/regulated laboratory professional.

CSMLS is not responsible for securing any clinical placements; rather, it is the individual's responsibility to find and secure a clinical placement and receive approval from CSMLS (and the provincial regulatory body, if applicable) to begin the clinical placement. Accredited diagnostic laboratories in a hospital or community setting (i.e., private laboratories) are acceptable sites to investigate support for a clinical placement. Research or veterinary laboratories are NOT acceptable laboratories for a clinical placement.

The applicant's CSMLS learning plan report should be shared with the laboratory's management to better understand the gaps that need to be fulfilled in a clinical placement for that applicant.

It is possible that not all activities can be completed in a single location; therefore, applicants may need to secure one or more sites to complete all of the requirements of the learning plan. Please complete one CPB for **each site** supporting a clinical placement.

Before the CPB is submitted to the supporting laboratory, please ensure:

- the personal information is complete in the "Information Sheet" section
- the applicant's CSMLS identification number is added to each page of the booklet for each discipline hoping to be covered in the clinical placement

Clinical Placement Requirements:

- **MUST** be **pre-approved** by the CSMLS **BEFORE** beginning
- **MUST** be completed in Canada (no exceptions)
- **MUST** be confirmed by an official letter with additional documentation (if applicable) and sent **directly** by the laboratory to the CSMLS office**,** either by mail or email (must be an organizational email, not generic like @yahoo, @outlook, @gmail, etc.)
    - Official letters and documentation have the following minimal requirements:
        - **MUST** indicate a commitment to provide the necessary training as outlined on the CPB
        - **MUST** be on official letterhead, dated and signed by the laboratory manager or director
        - **MUST** include the proposed start and end dates of the placement, and total number of hours expected to be spent in training in each discipline offered

Applicant CSMLS ID#: _____

Instructions for the Supporting Laboratory

The CSMLS is contracted by eight (8) of the nine (9) Canadian provincial MLT regulatory colleges to provide services assessing the knowledge, skills, and competency of medical laboratory technologists for entry-to-practice prior to regulatory registration.

The Clinical Placement Blueprint (CPB) describes the specific activities individuals with an assigned CSMLS learning plan will need to successfully complete under direct Canadian laboratory supervision by a certified/regulated laboratory professional.

Note: All clinical placements **MUST** be **pre-approved** by CSMLS **BEFORE** one can begin.

We recommend that those applying for a clinical placement supply the supporting laboratory with a copy of their CSMLS learning plan report so that both understand what gaps need to be covered through the clinical placement.

It is the laboratory's responsibility, along with the applicant, to determine the terms of a clinical placement within the laboratory; CSMLS does not act as an intermediary in this regard. The duration of the placement will vary based on the individual, their abilities, and the testing performed at the supporting laboratory (see the durations recommended at the end of each discipline).

Supporting laboratories must submit an official letter on behalf of the applicant, as outlined in the "Instructions to the Applicant" section under Clinical Placement Requirements.

For each activity listed in the required sections of this Clinical Placement Blueprint, we ask that the relevant trainer/assessor check the cell next to that activity as either: "completed satisfactorily" or "did not assess", and place their initial in the cell for each activity. If you need to provide additional information regarding the applicant's performance, please attach it to this document. If you need to increase the duration of the placement please contact us directly.

The "General Requirements" category competencies must be completed with all Clinical Placements.

Once the applicant's placement has been successfully completed, we request that you mail, directly to the CSMLS in a sealed envelope:

- the original completed Clinical Placement Blueprint, with initials and checkmarks,
- another letter on official letterhead indicating the actual start and completion dates of the Clinical Placement, with the total number of hours broken down by discipline,
- the job descriptions of all trainers/assessors (this information is shared with the regulators to prove acceptable training).

It is also recommended that you provide the applicant with a copy of the completed document for their records.

Correspondence and documentation can be mailed to the attention of:

Certification and Prior Learning Assessment Department
Canadian Society for Medical Laboratory Science
33 Wellington Street North
Hamilton, ON, L8R 1M7

Applicant CSMLS ID#: _____

Information Sheet

Applicant's Personal Information, to be completed by the applicant:

Name: _____

Signature: _____

CSMLS Identification Number: _____

Start Date of Clinical Placement: _____

End Date of Clinical Placement:

Laboratory and Contact Information, to be completed by the Laboratory Manager/Director:

Name of Organization: _____

Organization's Address: _____

Manager/Director's Name: _____

Title: _____

Signature: _____

Phone Number: _____

Email Address: _____

Primary Contact Name: _____

Title: _____

Signature: _____

Phone Number: _____

Email Address: _____

Applicant CSMLS ID#: _____

Trainer/Assessor Information

This section is mandatory for CSMLS approval

Indicate below, the names, signatures, and initials of any individual(s) who will be training/assessing the learner during this process.

Trainers **MUST** include:

- their CSMLS identification number to prove General MLT CSMLS certification
- their regulatory registration number, where applicable

If any trainer/assessor does not have CSMLS Certification at the MLT level, a copy of their resume MUST be included with this clinical placement OR the official letter that is submitted by the laboratory director/manager/supervisor.

Trainer/Assessor Information Please include additional sheet(s), if required			
Name	**Signature**	**Initials**	**CSMLS & Registry #:**

Applicant CSMLS ID#: _____

Clinical Chemistry Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
Safe Work Practices				
CC-01	Apply appropriate laboratory hygiene and infection control practices to minimize possible dangers from biological specimens, laboratory supplies, and equipment			
CC-02	Select and utilize appropriate methods for disinfection/sterilization of items while minimizing potential hazards			
CC-03	Apply the principles of standard precautions, including the use of personal protective equipment (PPE), for example gloves, mask, goggles, lab coat, gown, face shield, and respirator)			
CC-04	Apply or demonstrate knowledge of spill containment and clean up procedures for infectious material and dangerous chemicals			
CC-05	Label, date, handle, store and dispose of chemicals, dyes, reagents, solutions and sharps, biological waste, toxic material, biological material according to the Workplace Hazardous Materials Information System (WHMIS), existing legislation and institutional policy			
CC-06	Apply or demonstrate knowledge of first aid measures in response to incidents, including the reporting procedures related to safety and personal injury (e.g., needle stick, physical or chemical injury)			
CC-07	Utilize laboratory safety devices in a correct manner (e.g., biological safety cabinets, fume hoods, laminar flow cabinets, safety pipetting devices, safety containers and carriers, safety showers, eye washes)			
CC-08	Apply or demonstrate knowledge in response to fire emergencies and evacuation procedures			
CC-09	Identify the location and use of all fire and protective equipment and select appropriate disinfectants			

Applicant CSMLS ID#: _____

Clinical Chemistry Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
CC-10	Handle and dispose of sharps according to institutional policy			
CC-11	Comply with safety regulations as they pertain to the medical laboratory department			
Data and Specimen Collection and Handling				
CC-12	Ensure required information is provided and corresponds with requisition and sample labeling			
CC-13	Prioritize specimens by test request, urgency, and specimen type			
CC-14	Registers specimens into Laboratory Information System			
CC-15	Comply with existing guidelines for specimen retention, storage, and disposal			
CC-16	Verify specimen suitability according to established protocol for routine chemistry testing			
CC-17	Explain the importance of following protocol with respect to specimen collection and handling and possible testing or legal implications (e.g., for endocrinology, blood alcohol, cerebral spinal fluid (CSF), etc.)			
Analytical Processes				
CC-18	Analyze specimens using established protocols			
CC-19	Organize, operate, and troubleshoot assigned workload on the principle analyzer			
CC-20	Prioritize analyses (e.g., stat, urgent, routine, sample stability) and incorporate into workflow			
CC-21	Perform calculations as required (e.g., clearance, urine results, anion gap)			

Applicant CSMLS ID#: _____

Clinical Chemistry Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
Immunoassay				
CC-22	Performs immunological techniques as appropriate			
CC-23	Identify error codes and follow-up procedures for immunoassay testing			
Toxicology and Therapeutic Drug Monitoring (TDM)				
CC-24	Apply trough, peak, steady-state, collection time and patient history considerations to therapeutic drug monitoring			
CC-25	Classify common types of drugs of abuse			
CC-26	Perform analysis for drug monitoring identifying and reacting to critical values			
Electrophoresis				
CC-27	Perform routine electrophoresis including densitometry			
CC-28	Identify sources of error encountered in, and corrective actions for, electrophoresis			
CC-29	Correlate electrophoresis results to various disorders			
Osmometry				
CC-30	Operate a freezing point osmometer			
CC-31	Discuss the limitations of the method and the clinical significance of performing an osmolality and osmolar gap			
Point of Care Testing (POCT)				
CC-32	Describe the laboratory's role in point-of-care testing			
CC-33	Perform point-of-care testing techniques			

Applicant CSMLS ID#: _____

Clinical Chemistry Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
Blood Gases				
CC-34	Correlate arterial blood gases (ABG) result with common disturbances			
CC-35	Assess sample suitability			
CC-36	Illustrate how specimen type influences the parameters for arterial blood gases, pH and glucose			
Urinalysis				
CC-37	Verify specimen suitability according to established protocol for urinalysis			
CC-38	Analyze urine specimens using established protocol			
CC-39	Prepare and perform physical and chemical analyses on urines			
CC-40	Identify cellular and non-cellular components in microscopic urine sediment, differentiating between clinically significant and non-significant findings			
CC-41	Perform calculations related to timed urines (e.g., clearance, estimated Glomerular Filtration Rate (e-GFR))			
CC-42	Recognize instrument problems and participate in troubleshooting			
CC-43	Recognize the implications of laboratory findings and identify further testing (e.g., dilutions, reflex)			
Interpretation & Reporting / Quality Management				
CC-44	Follow established protocols and procedures, including those for continuous quality control/assurance/improvement, risk management and point-of-care testing			
CC-45	Perform instrument daily maintenance, start-up, calibration and quality control procedures			

Applicant CSMLS ID#: _____

Clinical Chemistry Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
CC-46	Operate and maintain fridges, centrifuges, and other laboratory equipment according to laboratory protocol			
CC-47	Recognize and resolve common sample problems			
CC-48	Recognize and address equipment/instrument malfunction (e.g., seek assistance and participate in troubleshooting)			
CC-49	Follow established preventative maintenance programs and maintain instrument logs as directed			
CC-50	Set up compound light microscope for Koehler illumination and demonstrate proficient use and care of the microscope			
CC-51	Apply the principles of microscopy			
CC-52	Recognize the limitations and interference points of the techniques and reagents used			
CC-53	Recognize the relationship between analyses, clinical information/condition, implausible results and diagnoses including the significance of reference ranges, critical values, method limitations, sources of interference and delta checks			
CC-54	Recognize and investigate when results of patient analyses are unexpected (e.g., critical values, implausible results)			
CC-55	Participate in maintaining appropriate documentation, (e.g., document laboratory errors and corrective measures taken as necessary)			
CC-56	Recognize the implications of laboratory findings and identify further testing			
CC-57	Verify that all ordered analyses have been completed			
CC-58	Validate results before reporting			

Applicant CSMLS ID#: _____

Clinical Chemistry Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
CC-59	Release, communicate, and document communications of results of laboratory analyses to clients and stakeholders (e.g., nurses, physicians, Public Health, Infection Control) in an appropriate and timely manner			
CC-60	Use the computer adequately to record, store and retrieve data			
CC-61	Retain laboratory results in accordance with existing legislation			
CC-62	Comply with existing regulations for specimen retention, storage and disposal			
CC-63	Demonstrate the principles of quality management			
CC-64	Utilize responsible practices that contribute to the cost-effective use of health care resources			

The recommended minimum length for a clinical placement in clinical chemistry is **6 weeks**.

Applicant CSMLS ID#: _____

Hematology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
Safe Work Practices				
HE-01	Apply appropriate laboratory hygiene and infection control practices to minimize possible dangers from biological specimens, laboratory supplies, and equipment			
HE-02	Select and utilize appropriate methods for disinfection/sterilization of items while minimizing potential hazards			
HE-03	Apply the principles of standard precautions, including the use of personal protective equipment (PPE) (i.e., gloves, mask, goggles, lab coat, gown, face shield, and respirator)			
HE-04	Apply or demonstrate knowledge of spill containment and clean up procedures for infectious material and dangerous chemicals			
HE-05	Label, date, handle, store and dispose of chemicals, dyes, reagents, solutions and sharps, biological waste, toxic material, biological material according to the Workplace Hazardous Materials Information System (WHMIS), existing legislation and institutional policy			
HE-06	Apply or demonstrate knowledge of first aid measures in response to incidents, including the reporting procedures related to safety and personal injury (e.g., needle stick, physical or chemical injury)			
HE-07	Utilize laboratory safety devices in a correct manner (e.g., biological safety cabinets, fume hoods, laminar flow cabinets, safety pipetting devices, safety containers and carriers, safety showers, eye washes)			
HE-08	Apply or demonstrate knowledge in response to fire emergencies and evacuation procedures			
HE-09	Identify the location and use of all fire and protective equipment and select appropriate disinfectants			

Applicant CSMLS ID#: _____

Hematology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
HE-10	Handle and dispose of sharps according to institutional policy			
HE-11	Comply with safety regulations as they pertain to the medical laboratory department			
Data and Specimen Collection and Handling				
HE-12	Ensure required information is provided and corresponds with requisition and sample labeling			
HE-13	Prioritize specimens by test request, urgency, and specimen type			
HE-14	Comply with existing guidelines for specimen retention, storage, and disposal			
HE-15	Recognize and resolve common sample problems, such as lipemia, cold agglutinins, hemolysis, clots, EDT antibodies			
HE-16	Verify specimen suitability according to established protocols			
Analytical Processes				
HE-17	Analyze specimens using established protocols			
HE-18	Organize, operate and troubleshoot assigned instrument workload			
HE-19	Prioritize analyses (e.g., stat, urgent, routine, sample stability) and incorporate into workflow			
HE-20	Perform calculations, if required			
HE-21	Perform routine coagulation testing			
HE-22	Perform hemoglobin electrophoresis including densitometry			

Applicant CSMLS ID#: _____

Hematology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
HE-23	Prepare, analyze and evaluate body fluids and cytospin smears			
Complete Blood Counts Automation				
HE-24	Process patient specimens and control materials through an automated multiparameter cell counter			
HE-25	Perform instrument maintenance, start-up and quality control procedures			
HE-26	Correctly interpret analyzer flags/alerts			
Manual Cell Procedures				
HE-27	Safely and correctly perform, and accurately report, the following tests: manual leukocyte count, manual platelet count			
HE-28	Prepare peripheral blood and bone marrow smears; identify and differentiate normal, immature and abnormal white blood cells, red cells (including parasites) and platelets; recognize normal and abnormal morphology for red cells, white cells and platelets			
HE-29	Correctly perform and accurately report ESRs following standard operating procedures and safety precautions			
Interpretation and Reporting/ Quality Management				
HE-30	Follow established protocols and procedures, including those for continuous quality control/assurance/improvement, risk management and point-of-care testing			
HE-31	Operate and maintain fridges, centrifuges and other laboratory equipment according to laboratory protocol			
HE-32	Recognize and address equipment/instrument malfunction (e.g., seek assistance and participate in troubleshooting)			

Applicant CSMLS ID#: _____

Hematology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
HE-33	Follow established preventative maintenance programs and maintain instrument logs as directed			
HE-34	Set up compound light microscope for Koehler illumination and demonstrate proficient use and care of the microscope			
HE-35	Apply the principles of microscopy			
HE-36	Recognize the limitations and interference points of the techniques and reagents used			
HE-37	Recognize the relationship between analyses, clinical information/condition, implausible results and diagnoses including the significance of reference ranges, critical values, method limitations, sources of interference and delta checks			
HE-38	Recognize and investigate when results of patient analyses are unexpected (e.g., critical values, implausible results)			
HE-39	Participate in maintaining appropriate documentation, (e.g., document laboratory errors and corrective measures taken as necessary)			
HE-40	Recognize the implications of laboratory findings and identify further testing			
HE-41	Verify that all ordered analyses have been completed			
HE-42	Validate results before reporting			
HE-43	Release, communicate, and document communications of results of laboratory analyses to clients and stakeholders (e.g., nurses, physicians, Infection Control) in an appropriate and timely manner			
HE-44	Use the computer adequately to record, store and retrieve data			
HE-45	Retain laboratory results in accordance with existing legislation			

Applicant CSMLS ID#: _____

Hematology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
HE-46	Comply with existing regulations for specimen retention, storage and disposal			
HE-47	Demonstrate the principles of quality management			
HE-48	Utilize responsible practices that contribute to the cost-effective use of health care resources			

The recommended minimum length for a clinical placement in hematology is **4 weeks.**

Applicant CSMLS ID#: _____

Histotechnology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
Safe Work Practices				
HI-01	Apply appropriate laboratory hygiene and infection control practices to minimize possible dangers from biological specimens, laboratory supplies, and equipment			
HI-02	Select and utilize appropriate methods for disinfection/sterilization of items while minimizing potential hazards			
HI-03	Apply the principles of standard precautions, including the use of personal protective equipment (PPE) (i.e., gloves, mask, goggles, lab coat, gown, face shield, and respirator)			
HI-04	Apply or demonstrate knowledge of spill containment and clean up procedures for infectious material and dangerous chemicals			
HI-05	Label, date, handle, store and dispose of chemicals, dyes, reagents, solutions and sharps, biological waste, toxic material, biological material according to the Workplace Hazardous Materials Information System (WHMIS), existing legislation and institutional policy			
HI-06	Apply or demonstrate knowledge of first aid measures in response to incidents, including the reporting procedures related to safety and personal injury (e.g., needle stick, physical or chemical injury)			
HI-07	Utilize laboratory safety devices in a correct manner (e.g., biological safety cabinets, fume hoods, laminar flow cabinets, safety pipetting devices, safety containers and carriers, safety showers, eye washes)			
HI-08	Apply or demonstrate knowledge in response to fire emergencies and evacuation procedures			
HI-09	Identify the location and use of all fire and protective equipment and select appropriate disinfectants			
HI-10	Handle and dispose of sharps according to institutional policy			

Applicant CSMLS ID#: _____

Histotechnology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
HI-11	Comply with safety regulations as they pertain to the medical laboratory department			
Data and Specimen Collection and Handling				
HI-12	Prioritize specimens by test request, urgency and specimen type			
HI-13	Assess specimen suitability			
HI-14	Ensure required information is provided and corresponds with requisition and sample			
HI-15	Take corrective actions to address deficiencies			
HI-16	Register specimens into Laboratory Information System			
Analytical Processes				
HI-17	Analyze specimens using established protocols			
HI-18	Organize, operate and troubleshoot assigned instrument workload			
HI-19	Prioritize analyses (e.g., stat, urgent, routine, sample stability) and incorporate into workflow			
HI-20	Perform calculations, if required			
Grossing				
HI-21	Prepare and maintain gross dissection area			
HI-22	Assist the pathologist in the grossing room, perform basic grossing			
Fixation				
HI-23	Prepare appropriate reagents for fixation and decalcification if required			

Applicant CSMLS ID#: _____

Histotechnology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
HI-24	Safely perform fixation, decalcification and secondary fixation as required and according to established protocols			
HI-25	Troubleshoot as necessary (e.g., fixation artifacts and pigments)			
Tissue Processing				
HI-26	Select appropriate reagents for paraffin processing			
HI-27	Operate an automated tissue processor			
HI-28	Perform basic troubleshooting procedures for processing			
Embedding				
HI-29	Correctly orientate and embed a variety of types of tissue specimens in paraffin blocks			
HI-30	Operate and maintain an embedding center, cold plate, and accessories			
HI-31	Perform troubleshooting procedures for embedding (incorrect orientation, unevenness)			
Microtomy				
HI-32	Cut artifact-free paraffin sections on a microtome and transfer to correctly-labeled slides			
HI-33	Operate and maintain the microtome, water bath, slide dryer, and related accessories			
HI-34	Recognize and troubleshoot slide preparation errors: chattering, compression, air bubbles, tears, folds, wrinkles, etc.			
Frozen Sections				
HI-35	Perform cryotomy on fresh tissue following established protocols			
HI-36	Operate and maintain the cryostat and accessories			

Applicant CSMLS ID#: _____

Histotechnology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
HI-37	Demonstrate knowledge of a cryostat decontamination procedure			
HI-38	Perform a rapid Hematoxylin and Eosin (H & E) stain on a frozen section			
Staining				
HI-39	Perform stains of acceptable quality for the diagnosis on tissue sections, peripheral blood and bone marrow films and microbiological smears, including the selection of control slides where appropriate			
HI-40	Perform and troubleshoot stained tissues: H & E, connective tissue, microorganisms, carbohydrates, lipids, pigments, immunochemistry (advanced technique)			
HI-41	Correlate relationship between staining technique and target tissue component			
HI-42	Apply the principles of microscopy to evaluate stained slides			
HI-43	Simultaneously perform multiple special stains			
HI-44	Prepare, store and dispose of reagents used in routine and special staining			
HI-45	Safely and correctly perform manual and automatic cover-slipping and labeling of stained slides			
HI-46	Operate and maintain an automated stainer and coverslipper (where available)			
Microanatomy				
HI-47	Identify and describe epithelial tissues, support tissues, muscle, cartilage, bone, nerve and vascular tissue using a correctly set-up microscope			
HI-48	Identify and describe the following microanatomical tissues: lungs, esophagus, stomach, pancreas, small intestine, large intestine, appendix, liver, gall bladder, spleen, kidney, testis, skin, uterus, cervix, ovary, prostate, lymph node, breast, adrenal, thyroid, heart, cerebrum, cerebellum, bone			
HI-49	Describe the relevance of microanatomical study to histology, including its use in quality control/assurance practices			

Applicant CSMLS ID#: _____

Histotechnology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
Interpretation and Reporting/ Quality Management				
HI-50	Follow established protocols and procedures, including those for continuous quality control/assurance/improvement, and risk management			
HI-51	Operate and maintain fridges, centrifuges, microscopes, tissue processor, microtome, and other laboratory equipment according to laboratory protocol			
HI-52	Recognize and resolve common sample problems			
HI-53	Recognize and address equipment/instrument malfunction (e.g., seek assistance and participate in troubleshooting)			
HI-54	Set up compound light microscope for Koehler illumination and demonstrate proficient use and care of the microscope			
HI-55	Apply the principles of microscopy			
HI-56	Follow established preventative maintenance programs and maintain instrument logs as directed			
HI-57	Recognize the limitations and interference points of the techniques and reagents used			
HI-58	Recognize the relationship between analyses, clinical information/condition, implausible results and diagnoses including the significance of critical values, sources of interference and method limitations			
HI-59	Recognize and investigate when results of patient analyses are unexpected (e.g., critical values, implausible results)			
HI-60	Participate in maintaining appropriate documentation (e.g., document laboratory errors and corrective measures taken as necessary)			
HI-61	Recognize the implications of laboratory findings and identify further testing			
HI-62	Verify that all ordered analyses have been completed			
HI-63	Validate results before reporting			

Applicant CSMLS ID#: _____

Histotechnology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
HI-64	Release, communicate, and document communications of results of laboratory analyses to clients and stakeholders (e.g., nurses, physicians, Infection Control) in an appropriate and timely manner			
HI-65	Retain laboratory results in accordance with existing legislation			
HI-66	Use the computer adequately to record, store and retrieve data			
HI-67	Comply with existing regulations for specimen retention, storage and disposal			
HI-68	Conform to lab protocols regarding storage of blocks and slides			
HI-69	Demonstrate the principles of quality management			
HI-70	Utilize responsible practices that contribute to the cost-effective use of health care resources			

The recommended minimum length for a clinical placement in histotechnology is **6 weeks.**

Applicant CSMLS ID#: _____

Microbiology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
Safe Work Practices				
MI-01	Apply appropriate laboratory hygiene and infection control practices to minimize possible dangers from biological specimens, laboratory supplies, and equipment			
MI-02	Select and utilize appropriate methods for disinfection/sterilization of items while minimizing potential hazards			
MI-03	Apply the principles of standard precautions, including the use of personal protective equipment (PPE) (i.e., gloves, mask, goggles, lab coat, gown, face shield, and respirator)			
MI-04	Apply or demonstrate knowledge of spill containment and clean up procedures for infectious material and dangerous chemicals			
MI-05	Label, date, handle, store and dispose of chemicals, dyes, reagents, solutions and sharps, biological waste, toxic material, biological material according to the Workplace Hazardous Materials Information System (WHMIS), existing legislation and institutional policy			
MI-06	Apply or demonstrate knowledge of first aid measures in response to incidents, including the reporting procedures related to safety and personal injury (e.g., needle stick, physical or chemical injury)			
MI-07	Utilize laboratory safety devices in a correct manner (e.g., biological safety cabinets, fume hoods, laminar flow cabinets, safety pipetting devices, safety containers and carriers, safety showers, eye washes)			
MI-08	Apply or demonstrate knowledge in response to fire emergencies and evacuation procedures			
MI-09	Identify the location and use of all fire and protective equipment and select appropriate disinfectants			
MI-10	Handle and dispose of sharps according to institutional policy			

Applicant CSMLS ID#: _____

Microbiology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
MI-11	Comply with safety regulations as they pertain to the medical laboratory department			
Data and Specimen Collection and Handling				
MI-12	Ensure that appropriate specimens are procured according to protocol			
MI-13	Ensure specimens have been correctly accessioned			
MI-14	Assess specimen suitability, specimen priority and apply rejection criteria, screening criteria, and reporting comments			
MI-15	Recognize and resolve common sample problems			
MI-16	Prepare specimens for plating and microscopic examination			
MI-17	Plate all types of specimens for culture			
MI-18	Incubate plates in the proper atmospheric conditions and temperatures			
MI-19	Comply with existing guidelines for specimen retention, storage and disposal			
Analytical Processes				
MI-20	Analyze specimens using established protocols			
MI-21	Organize, operate and troubleshoot assigned instrument workload			
MI-22	Prioritize analyses (e.g., stat, urgent, routine, sample stability) and incorporate into workflow			
MI-23	Perform calculations, if required			
Microscopy and Gram Stain				
MI-24	Evaluate the quality of staining and take appropriate action to correct deficiencies			

Applicant CSMLS ID#: _____

Microbiology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
MI-25	Perform and interpret Gram stained direct smears from clinical specimens			
MI-26	Identify and quantitate cells, bacteria and fungi in routine smears			
MI-27	Microscopically assess the quality of lower respiratory tract specimens			
MI-28	Assess vaginal smears for bacterial vaginosis and/or yeast			
MI-29	Interpret wet preparations for Trichomonas and/or yeast			
Colonial Morphology and Identification				
MI-30	Characterize the colonial and microscopic morphology of organisms			
MI-31	Recognize colonial morphologies of normal flora and potential pathogens on each			
MI-32	Complete Gram stains from cultures			
MI-33	Correlate culture results with the direct smear			
MI-34	Perform analyses to screen and/or identify pathogens and rule out normal flora using appropriate tests, including immunological methods, test kits and automated instrumentation			
MI-35	Subculture organisms to ensure pure culture and isolated colonies appropriately			
MI-36	Correlate results with patient data such as age, symptoms and multiple collection results to determine possible pathogen identification			
MI-37	Recognize the relationship between analyses, clinical information and diagnoses			
MI-38	Rule out non-clinically significant organisms			
MI-39	Apply molecular diagnostic techniques in pathogen detection			
MI-40	Refer isolates to the reference lab for testing as required			

Applicant CSMLS ID#: _____

Microbiology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
Urine				
MI-41	Recognize normal flora, pathogenic bacteria and/or yeast from the urinary tract and be able to confirm the identity of each pathogen or potential pathogen			
MI-42	Perform colony counts			
MI-43	Calculate and compare colony counts with clinical information and work up			
MI-44	Differentiate clinically significant and insignificant results including contamination			
MI-45	Report urine cultures according to clinical site procedures			
Gastro-intestinal (GI) Tract/Enteric				
MI-46	Recognize normal flora, pathogenic bacteria and/or yeast from the GI tract and be able to confirm the identity of each pathogen or potential pathogen			
MI-47	Perform analyses for clinically significant organisms from the gastrointestinal tract			
MI-48	Identify bacteria from gastrointestinal cultures			
MI-49	Report enteric cultures according to clinical site procedures			
Genital				
MI-50	Recognize normal flora, pathogenic bacteria and/or yeast from the genital tract and be able to confirm the identity of each pathogen or potential pathogen			
MI-51	Recognize colonial morphologies of normal flora and potential pathogens on each media used			
MI-52	Perform rapid testing methods to isolate Group B Streptococcus in expectant mothers at risk			

Applicant CSMLS ID#: _____

Microbiology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
MI-53	Report genital cultures according to clinical site procedures			
Respiratory				
MI-54	Recognize normal flora, pathogenic bacteria and/or yeast from the respiratory tract and be able to confirm the identity of each pathogen or potential pathogen			
MI-55	Recognize colonial morphology of normal flora and potential pathogens on routine media used			
MI-56	Perform analyses to identify routine pathogens using appropriate tests including immunological methods, test kids and/or automated instrumentation			
MI-57	Report respiratory cultures according to clinical site procedures			
Wound, Tissue and Fluid				
MI-58	Recognize normal flora and potential pathogens for wounds, tissues, and fluids, both aerobic and anaerobic, based on colonial morphologies on routine media			
MI-59	Perform analyses to identify routine pathogens using appropriate tests including immunological methods, test kits and/or automated instrumentation			
MI-60	Report wound and sterile fluid cultures according to clinical site procedures			
Blood Culture				
MI-61	Operate an automated blood culture system including loading and unloading, maintenance, troubleshooting error codes and recognizing flagged results			
MI-62	Prepare and interpret Gram stained smears			
MI-63	Differentiate possible contaminants from probable pathogens			
MI-64	Correlate results of blood cultures with other body sites			

Applicant CSMLS ID#: _____

Microbiology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
MI-65	Report preliminary, positive and final negative blood cultures			
MI-66	Operate and maintain an automated blood culture instrument			
Susceptibility Testing				
MI-67	Perform and interpret antimicrobial susceptibility testing on routine pathogens according to the Clinical and Laboratory Standards Institute (CLSI) Guidelines, including appropriate methods such as automated instrumentation, Kirby-Bauer, Double disk diffusion (D) test, Epsilometer (E) test			
MI-68	Perform analyses to screen and/or identify common antibiotic resistance in organisms			
MI-69	Categorize methicillin resistant staphylococcus aureus (MRSA), extended spectrum beta lactamase (ESBL), vancomycin resistant enterococcus (VRE), and beta lactamase producers			
MI-70	Report any antibiotic resistant organism (ARO) isolate susceptibility testing as determined by established protocols			
MI-71	Report antimicrobial susceptibility testing results according to clinical site procedures and specimen source			
Interpretation and Reporting/ Quality Management				
MI-72	Set up compound light microscope for Koehler illumination and demonstrate proficient use and care of the microscope			
MI-73	Apply the principles of microscopy			
MI-74	Recognize and investigate when results of patient analyses are unexpected (e.g., critical values, implausible results)			
MI-75	Suggest appropriate follow-up testing for aberrant results for patient tests, quality control, and susceptibility testing			

Applicant CSMLS ID#: _____

Microbiology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
MI-76	Follow established protocols and procedures, including those for continuous quality control/assurance/improvement, risk management and point-of-care testing			
MI-77	Operate and maintain incubators, fridges, automated-stainers, centrifuges and biohazard hoods according to lab protocol			
MI-78	Recognize and address equipment/instrument malfunction (e.g., seek assistance and participate in troubleshooting)			
MI-79	Follow established preventative maintenance programs and maintain instrument logs as directed			
MI-80	Recognize the limitations and interference points of the techniques and reagents used			
MI-81	Recognize the relationship between analyses, clinical information/condition, implausible results and diagnoses including the significance of critical values, sources of interference and method limitations			
MI-82	Participate in maintaining appropriate documentation (e.g., document laboratory errors and corrective measures taken as necessary)			
MI-83	Complete susceptibility testing and related quality control practices			
MI-84	Recognize the implications of laboratory findings and identify further testing			
MI-85	Verify that all ordered analyses have been completed			
MI-86	Validate results before reporting			
MI-87	Release and communicate results of laboratory analyses to clients and stakeholders (e.g., nurses, physicians, Public Health, Infection Control) in an appropriate manner			
MI-88	Use the computer adequately to record, store and retrieve data			
MI-89	Retain laboratory results in accordance with existing legislation			

Applicant CSMLS ID#: _____

Microbiology Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
MI-90	**Comply with existing regulations for specimen retention, storage and disposal**			
MI-91	**Demonstrate the principles of quality management**			
MI-92	**Utilize responsible practices that contribute to the cost-effective use of health care resources**			

The recommended minimum length for a clinical placement in clinical microbiology is 6 weeks.

Applicant CSMLS ID#: _____

Transfusion Science Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
Safe Work Practices				
TS-01	Apply appropriate laboratory hygiene and infection control practices to minimize possible dangers from biological specimens, laboratory supplies, and equipment			
TS-02	Select and utilize appropriate methods for disinfection/sterilization of items while minimizing potential hazards			
TS-03	Apply the principles of standard precautions, including the use of personal protective equipment (PPE) (i.e., gloves, mask, goggles, lab coat, gown, face shield, and respirator)			
TS-04	Apply or demonstrate knowledge of spill containment and clean up procedures for infectious material and dangerous chemicals			
TS-05	Label, date, handle, store and dispose of chemicals, dyes, reagents, solutions and sharps, biological waste, toxic material, biological material according to the Workplace Hazardous Materials Information System (WHMIS), existing legislation and institutional policy			
TS-06	Apply or demonstrate knowledge of first aid measures in response to incidents, including the reporting procedures related to safety and personal injury (e.g., needle stick, physical or chemical injury)			
TS-07	Utilize laboratory safety devices in a correct manner (e.g., biological safety cabinets, fume hoods, laminar flow cabinets, safety pipetting devices, safety containers and carriers, safety showers, eye washes)			
TS-08	Apply or demonstrate knowledge in response to fire emergencies and evacuation procedures			
TS-09	Identify the location and use of all fire and protective equipment and select appropriate disinfectants			
TS-10	Handle and dispose of sharps according to institutional policy			

Applicant CSMLS ID#: _____

Transfusion Science Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
TS-11	Comply with safety regulations as they pertain to the medical laboratory department			
Data and Specimen Collection and Handling				
TS-12	Ensure that appropriate ABO/Rh and antibody screening specimens are procured according to protocol			
TS-13	Verify specimen suitability			
TS-14	Verify identification of specimen and requisition. Check patient transfusion history and establish sample expiry date			
TS-15	Recognize and resolve common sample problems			
Analytical Processes				
TS-16	Analyze specimens using established protocols			
TS-17	Organize, operate and troubleshoot assigned instrument workload			
TS-18	Prioritize analyses (e.g., stat, urgent, routine, sample stability) and incorporate into workflow			
TS-19	Perform calculations, if required			
Pretransfusion Testing				
TS-20	Perform ABO and Rh system typing, to include weak D testing and resolution of ABO grouping discrepancies			
TS-21	Demonstrate grading and interpretation of ABO/Rh and antibody screening tests			
TS-22	Perform and interpret antibody screen as required			

Applicant CSMLS ID#: _____

Transfusion Science Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
TS-23	Select the suitable method for crossmatching donor units (i.e., electronic, immediate spin, full anti-human globulin (AHG) crossmatch or emergency un-crossmatched) and perform crossmatching			
TS-24	Perform and evaluate a direct antiglobulin test (DAT), including follow-up testing if required (monospecific reagents, elution)			
TS-25	Where available, operate a semi-automated (MTS) /automated transfusion analyzer including loading and unloading, maintenance, troubleshooting error codes and recognizing flagged results			
TS-26	Apply the principles of microscopy to laboratory analysis where needed (inverted microscope)			
TS-27	Document all aspects of pretransfusion testing accurately and legibly			
Transfusion Reaction Testing				
TS-28	Check all relevant paperwork and verify patient identity			
TS-29	Perform an investigation on a reported transfusion reaction			
TS-30	Perform testing on pre- and post-transfusion reaction samples according to the laboratory standard operating procedure (SOP)			
TS-31	Initiate appropriate follow-up for errors in documentation, positive DAT, hemolysis or icterus detected according to laboratory SOPs			
TS-32	Perform initial and appropriate follow up tests on suspected transfusion reactions			
TS-33	Perform additional follow-up test where required			
Blood Components				
TS-34	Identify and maintain optimal storage requirements for components and products			

Applicant CSMLS ID#: _____

Transfusion Science Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
TS-35	Maintain sorted inventory and documentation of all blood components/products			
TS-36	Respond to requests within appropriate time lines			
TS-37	Select the most appropriate blood component and product			
TS-38	Perform procedures required to make components/products transfusion ready			
TS-39	Determine suitability of product before issuing			
TS-40	Prepare blood and other related products for issue			
TS-41	Document all steps in the procedure to trace the final disposition of all donor products			
TS-42	Transport blood products according to institutional policy			
TS-43	Track transfused units (i.e., lookback, traceback)			
Pre/Post Natal Testing				
TS-44	Perform prenatal tests and investigations			
TS-45	Perform testing on postnatal and cord specimens			
TS-46	Perform feto-maternal testing follow-up when required			
TS-47	Determine which mothers are eligible to receive Rh immune globulin and calculate dose			
TS-48	Issue Rh immune globulin			
TS-49	Perform pretransfusion testing for neonatal transfusions			
Antibody Investigation				
TS-50	Perform irregular antibody investigations, including documentation of all results			

Applicant CSMLS ID#: _____

Transfusion Science Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
TS-51	Perform an antibody investigation and exclude antibodies using the established laboratory protocol			
TS-52	Differentiate between clinically significant and insignificant antibodies			
TS-53	Perform the RBC phenotype for patient and donor units			
TS-54	Select and issue the most appropriate blood for transfusion to patient with an unexpected antibody (autoantibody or alloantibody)			
Interpretation and Reporting/ Quality Management				
TS-55	Follow established protocols and procedures, including those for continuous quality control/assurance/improvement, risk management and point-of-care testing			
TS-56	Operate, calibrate, and maintain refrigerator, freezer, cell washers, centrifuges, platelet agitators, plasma washers, incubators, and other laboratory equipment according to laboratory protocol			
TS-57	Follow established preventative maintenance programs and maintain instrument logs as directed			
TS-58	Perform quality control checks on blood components, reagents and equipment			
TS-59	Recognize and address equipment/instrument malfunction (e.g., seek assistance and participate in troubleshooting)			
TS-60	Set up compound light microscope for Koehler illumination and demonstrate proficient use and care of the microscope			
TS-61	Apply the principles of microscopy			
TS-62	Demonstrate principles of quality management regarding transfusion medicine reagents, equipment and records			

Applicant CSMLS ID#: _____

Transfusion Science Requirements		Completed satisfactorily ✓	Did not assess ✓	Initials
Number	**Requirement Details**			
TS-63	Recognize the limitations and interference points of the techniques and reagents used			
TS-64	Recognize the relationship between analyses, clinical information/condition, implausible results and diagnoses including the significance of critical values, sources of interference and method limitations			
TS-65	Recognize and investigate when results of patient analyses are unexpected (e.g., critical values, implausible results)			
TS-66	Participate in maintaining appropriate documentation (e.g., document laboratory errors and corrective measures taken as necessary)			
TS-67	Recognize the implications of laboratory findings and identify further testing required			
TS-68	Verify that all ordered analyses have been completed			
TS-69	Validate results before reporting			
TS-70	Release and communicate results of laboratory analyses to clients and stakeholders (e.g., nurses, physicians, Canadian Blood Services, Infection Control) in an appropriate manner			
TS-71	Use the computer adequately to record, store and retrieve data			
TS-72	Retain laboratory results in accordance with existing legislation			
TS-73	Comply with existing regulations for specimen retention, storage and disposal			
TS-74	Utilize responsible practices that contribute to the cost-effective use of health care resources			

The recommended minimum length for a clinical placement in transfusion science is **6 weeks.**