Post-baccalaureate Certificate in Blood Banking for Medical Laboratory Science Course Descriptions:

**MLS 4118: Laboratory Operations.** 1 credit. Basic concepts applicable to all areas of the clinical laboratory. Quality assurance and quality control, laboratory safety, including federal regulations, and related topics.

**MLS 4140: Clinical Laboratory Management.** 3 credits. Basic concepts of laboratory management, including organizational principles, financial management of resources, decision-making and problem-solving skills, human resource management.

**MLS 4141: Immunology and Serology.** 3 credits. Principles of the immune system’s components, functions, interactions with microorganisms, and the clinical applications of immunologic assays to human health and disease.

**MLS 4150: Immunohematology.** 3 credits. This course explores the major blood group systems that impact the practice of transfusion medicine and examines the processing and distribution of blood products supplied by transfusion services. Major topics covered in this one-semester course include: 1- donor selection and the collection, preparation, and storage of blood products, 2 - the prevention of transfusion reactions through identification of unsuspected antibodies and compatibility testing, and 3- the recognition of transfusion-associated conditions and diseases. In addition, quality assurance and compliance measures in blood banking are reviewed.

**MLS 4151: Molecular Diagnostics.** 3 credits. The advances in scientific technology have expanded the interest and applicability of nucleic acid based analysis within clinical diagnostic laboratories and routine screening procedures. The Molecular Diagnostics course is an introduction to the molecular techniques used to diagnose human diseases. The course will emphasize the technology, theory, and methodology of specific molecular protocols that can be utilized within a clinical laboratory setting to aid in disease diagnosis, including those of genetic, oncogenic, and infectious origin.

**MLS 4160: Blood Bank Practicum.** 4 credits. The Blood Bank Clinical Practicum is a 3-week, required clinical rotation for students in the BSHS in MLS or the post-baccalaureate MLS or Blood Banking certificate programs. During this practicum course, the student will actively engage in applying the medical knowledge and clinical skills gained in the didactic Immunohematology course (MLS 4150).