

Appendix A

COURSE DESCRIPTIONS

MEDICAL TECHNOLOGY COURSES

1. Medical Immunohematology

Study of the theory of immunohematology, with emphasis on antigen systems of red cells and antibodies produced against these, as related to blood transfusion. Included will be regulations governing blood banks, methodologies used and the importance and hazards of transfusion of human blood components.

2. Clinical Immunohematology

Examination of methodologies and problem-solving in immunohematology, to include crossmatching, antibody identification, preparation and transfusion of blood components and transfusion reactions.

3. Basic Medical Hematology and Coagulation

Theoretical aspects of routine hematology and coagulation procedures are covered in detail. Normal cellular elements of the blood and bone marrow and coagulation factors are covered and correlated to appropriate hematology techniques.

4. Clinical Hematology and Coagulation

Performance of various hematologic and coagulation techniques is emphasized, with theory and comparison of techniques discussed where pertinent. Appropriate pathologic states are reviewed and thoroughly investigated, using case presentations.

5. Immunology / Serology

Review of immune mechanisms of man and study of clinical procedures using these mechanisms. Students learn serological diagnostic tests and instrumentation such as EIA, flow cytometry and HLA typing.

6. Advanced Medical Hematology and Coagulation

Theoretical aspects of specialized hematology and coagulation techniques are reviewed in appropriate detail. Hematologic and coagulation disease states are thoroughly studied and correlated to the relevant basic and advanced techniques. (Prerequisite: Basic medical Hematology and Coagulation)

7. Urinalysis and Other Body Fluids

Study of urine and other body fluids, as well as topics in anatomy and physiology relating to the renal system and areas of body fluid collection.

8. Medical Chemistry

Study of enzymology, endocrinology, biochemistry of lipids, carbohydrates and proteins, metabolism of nitrogenous end products, physiology and metabolism of fluids and electrolytes, colorimetry and spectrophotometry, electrophoresis, chromatography, theory and principle of

instrumentation, toxicology, quality control and use of statistics in the clinical laboratory. Course will include select topics of basic anatomy and physiology.

9. Clinical Chemistry

Performance of various clinical chemistry procedures, with an emphasis on techniques, principle of procedures and relationship of these procedures to disease states. Also, a detailed study of various instruments used in clinical procedures.

10. Clinical Microbiology

Identification of pathological microorganisms from normal and infectious material by appropriate laboratory techniques; the biochemical concepts employed in microbial isolation and identification. Course will include instrumentation and quality control.

11. Medical Microbiology

Detailed study of pathogenic microorganisms encountered in infectious diseases, symptomatology, identification, treatment and epidemiology of microorganisms. A study of other pathogenic organisms such as yeast, fungi, viruses, and higher forms of parasite will also be included. Course includes molecular diagnostic techniques.

12. Clinical Seminar

This course is divided into three major segments:

- a. Orientation/Venipuncture:
An introduction to the laboratory. Included is an overview of basic laboratory structure and the duties of personnel at various levels of training. Customer service as a function of the laboratory is explained. A venipuncture course is taught to enable the students to become proficient in this area. Patient relations and education responsibilities of the CLS are included during the phlebotomy rotation and the rotations through the laboratory departments.
- b. Foundations of Education and Research:
An introduction to the principles of education, research and audio/visual preparation. The course includes the presentation of an in-house case study and writing a research paper utilizing current journal articles.
- c. Laboratory Management:
An introduction analysis of the managerial process, including cost-volume-profit relationship, budgets, space allocation, marketing, human resource management and personnel interviews. Acquisition and evaluation of Laboratory Information Systems is also included, as well as a discussion on ethics.
- d. Healthcare Team Rotation:
An introduction to other members of the allied health team. The interaction between the laboratory and the other departments, respiratory therapy, pharmacy, physical medicine and nursing, is highlighted.