

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: MLT 1300C

COURSE TITLE: Hematology

PREREQUISITE(S): None

COREQUISITE(S): None

CREDIT HOURS: 4

CONTACT HOURS/WEEK: 6

CONTACT HOUR BREAKDOWN:

Lecture/Discussion:
Laboratory:
Other _____: 6 (Lecture/laboratory combination)

FACULTY WORKLOAD POINTS: 6

STANDARDIZED CLASS SIZE
ALLOCATION: 20

CATALOG COURSE DESCRIPTION:

This course emphasizes instruction in the theories and techniques of routine hematology, including the hematopoietic system, clinical correlations, and related laboratory procedures. Peripheral blood cell enumeration, cell identification and morphology, and hemoglobin analysis are emphasized.

SUGGESTED TEXT(S):

Cielsa, Betty, Hematology in Practice, Current Edition F.A.

Davis Carr, JH and Bernadette F. Rodak. Clinical Hematology

Taber's Cyclopedic Medical Dictionary, F.A. Davis,
Current edition.

Atlas, Current Edition, Elsevier Saunders

IMPLEMENTATION DATE: January, 1989

REVIEW OR MODIFICATION DATE: Fall Term, 1996 (971)
Fall Term, 2002 (20031)
Fall Term, 2008 (20091) - Outline Review 2007

COURSE TOPICS	<u>CONTACT HOURS PER TOPIC</u>
I. Laboratory Safety	6
A. OSHA Chemical Hygiene Standard	
B. OSHA Blood Borne Pathogens Standard	
C. Accidents	
D. Student Lab Safety Regulations	
E. Use of Lab Glassware	
II. Calculations	6
A. Significant Digits	
B. Scientific Notation	
C. Metric System Conversions	
III. The Clinical Laboratory Profession	3
A. Professional Attributes	
B. Role of Clinical Lab in Medicine	
C. Credentialing Process	
IV. Quality Assurance	10
A. Quality Control Parameters	
B. Reliability of Lab Testing	
C. Reference Ranges	
D. Specimen collection and Handling	
V. Instrumentation	6
A. Microscope	
B. Spectrophotometer	
C. Automated Cell Counters	
D. Centrifuge	
VI. Hematopoiesis	6
A. Reticuloendothelial System	
B. Stem Cell Theory	
C. Cellular Morphology and Biochemical Characteristics	
VII. Erythrocytes	15
A. Formation	
B. Function	

COURSE TOPICS (CONTINUED)	<u>CONTACT HOURS PER TOPIC</u>
C. Hemoglobin Formation	
D. Clinical Correlations	
VIII. Laboratory Erythrocyte Evaluation	12
A. Routine Lab Procedures	
B. Special Lab Procedures	
C. Morphology Evaluation	
D. Quality Control Parameters	
IX. Leukocytes	15
A. Formation	
B. Function	
C. Clinical Correlations	
VIII. Laboratory Leukocyte Evaluation	11
A. Routine Lab Procedures	
B. Special Lab Procedures	
C. Morphology Evaluation	
D. Quality Control Parameters	

PROGRAM TITLE: Medical Laboratory Technology

COURSE TITLE: Hematology

CIP NUMBER: 0317.030900

LIST PERFORMANCE STANDARD ADDRESSED:

NUMBER(S): TITLES(S):

23.0 DEMONSTRATE BASIC KNOWLEDGE OF HEMATOLOGY, PERFORM CLINICAL LABORATORY "WAIVED TESTS" -- The student will be able to:

- 23.01 Discuss techniques of hematology related to counting formed elements of blood.
- 23.02 Perform techniques of hematology related to preparation and staining.
- 23.03 Discuss techniques of cell differential microscopic examination of blood films.
- 23.04 Perform techniques of hematology related to spun hematocrit tests.
- 23.06 Perform techniques of hematology related to hemoglobin tests.
- 23.07 Discuss techniques of hematology related to calculation of red blood cell indices.
- 23.08 Discuss basic techniques of hematology related to normal and abnormal physiology.

25.0 DISCUSS ANATOMY AND PHYSIOLOGY OF THE HUMAN BODY AS IT RELATES TO THE FIELD OF MEDICAL LABORATORY TECHNOLOGY -- The student will be able to:

- 25.01 Identify the major body systems and their anatomical features.
- 25.02 Explain the physiology processes in the human system necessary to influence and maintain homeostasis.

26.0 DISCUSS THE GENERAL RESPONSIBILITIES AND FUNCTIONS ENCOUNTERED BY A MEDICAL TECHNICIAN -- The student will be able to:

- 26.01 Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solutions of such questions.
- 26.02 Organize and communicate the results obtained by observation and experimentation.
- 26.03 Demonstrate ability to evaluate and draw conclusions.
- 26.04 Demonstrate knowledge of anatomy and physiology of body systems.
- 26.05 Demonstrate ability to report observations in written or oral form.
- 26.06 Discuss the licensers and certification requirements of the major classifications of clinical laboratory personnel.

27.0 APPLY QUALITY ASSURANCE PRINCIPLES AND SAFETY PROTOCOLS -- The student will be able to:

- 27.01 Recognize specimen suitability and determine need for rejection/recollection using factors described in clinical protocol.
- 27.02 Describe special procedures for transporting and processing specimens.
- 27.03 Describe clinical laboratory role in providing quality assurance in laboratory testing, reporting, and use and maintenance.
- 27.04 Demonstrate all required calibration procedures.

LIST PERFORMANCE STANDARD ADDRESSED: (CONTINUED)

NUMBER(S): TITLES(S):

- 27.05 Demonstrate and record all quality control procedures unacceptable results.
- 27.06 Identify and report problems encountered in daily quality control according to standard operating procedures.
- 27.07 Adhere to current OSHA regulations regarding laboratory hazards.

29.0 DEMONSTRATE KNOWLEDGE OF HEMATOLOGICAL PRINCIPLES AND PROCEDURES -- The student will be able to:

- 29.01 Discuss the organs, cells and cellular interaction of the lymphoid and reticuloendothelial systems.
- 29.02 Discuss the principles of and perform routine hematology procedures.
- 29.03 Differentiate normal from abnormal blood cell morphology and relate the abnormal findings to the commonly referenced hematological disorders.
- 29.04 Identify normal and abnormal molecular structure of hemoglobin and the more common hemoglobinopathies.

38.0 DEMONSTRATE KNOWLEDGE OF ADVANCED HEMATOLOGICAL PRINCIPLES AND PROCEDURES -- The student will be able to:

- 38.01 Identify normal and abnormal, immature and mature erythrocytes at each stage of maturation.
- 38.02 Identify and distinguish between normal, atypical and leukemic leukocytes at each stage of maturation.



NOTE: Use either the Tab key or mouse click to move from field to field. The box will expand to accommodate your entry.

Section 1	SEMESTER CREDIT HOURS (CC): <u>4</u>
COURSE PREFIX AND NUMBER: <u>MLT 1300C</u>	CONTACT HOURS (NCC): _____
COURSE TITLE: <u>Hematology</u>	

Section 2
TYPE OF COURSE: (Click on the box to check all that apply)

<input type="checkbox"/> AA Elective	<input checked="" type="checkbox"/> AS Required Professional Course	<input type="checkbox"/> College Prep
<input type="checkbox"/> AS Professional Elective	<input checked="" type="checkbox"/> AAS Required Professional Course	<input type="checkbox"/> Technical Certificate
<input type="checkbox"/> Other _____	<input type="checkbox"/> PSAV	<input type="checkbox"/> Apprenticeship
<input type="checkbox"/> General Education: (For General Education courses, you must also complete Section 3 and Section 7)		

Section 3 (If applicable)
INDICATE BELOW THE DISCIPLINE AREA FOR GENERAL EDUCATION COURSES:

<input type="checkbox"/> Communications	<input type="checkbox"/> Social & Behavioral Sciences	<input type="checkbox"/> Mathematics
<input type="checkbox"/> Natural Sciences	<input type="checkbox"/> Humanities	

Section 4
INTELLECTUAL COMPETENCIES:

<input checked="" type="checkbox"/> Reading	<input type="checkbox"/> Speaking	<input checked="" type="checkbox"/> Critical Analysis	<input checked="" type="checkbox"/> Quantitative Skills	<input checked="" type="checkbox"/> Scientific Method of Inquiry
<input checked="" type="checkbox"/> Writing	<input checked="" type="checkbox"/> Listening	<input checked="" type="checkbox"/> Information Literacy	<input checked="" type="checkbox"/> Ethical Judgment	<input checked="" type="checkbox"/> Working Collaboratively

Section 5 LEARNING OUTCOMES	METHOD OF ASSESSMENT
• Demonstrate laboratory safety for use of bio-hazardous material and chemicals	Safe participation in all laboratory activities; written exams; safety worksheets
• Perform specified hematology lab assessments necessary for entry into practicum	Lab reports; lab practical; collaborative laboratory problem solving
• Demonstrate ability to apply mathematical formulas to laboratory testing	Lab reports; lab practical; written exams; assignments
• Discuss quality assurance principles and apply them in the hematology lab setting	Lab reports; written exams
• Explain selected hematological disorders and apply appropriate lab data	Research report; written exams
• Evaluate lab data for precision, accuracy, and relationship to reference ranges	Lab reports; lab practical; written exams
• Discuss professional credentialing, medical information privacy, and professional conduct as they apply to medical laboratory practice	Classroom discussion participation; written exams
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Section 6
Name of Person Completing This Form: Merry A. Carter Date: 11/20/2007