SHORELINE COMMUNITY COLLEGE

MLT 181 INTRODUCTION TO MEDICAL LAB PROCEDURES LECTURE

SYLLABUS

COURSE DESCRIPTION: Course includes lecture & seminar introducing theory of clinical laboratory procedure, laboratory safety, specimen collection, quality control and urinalysis. Concurrent enrollment in MLT 182 recommended. Mandatory Decimal Grading.

Prerequisites: BIOL& 170 and BIOL& 211

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| CLASS TIME | ON LINE |
| ROOM | TUESDAY ONLINE CANVAS CHAT 1200-1250 |
| INSTRUCTOR | SUE SEEGERS |
| OFFICE | 2330 |
| PHONE | (206) 546 4710 |
| EMAIL | sseegers@shoreline.edu |
| OFFICE HOURS – All office hours will be online unless coronavirus restrictions are lifted and we can return to campus | MLT 181 Canvas chat Tues 12-1250  MLT 182 Canvas chat T/Th 10-11am  MLT 182 Canvas chat Th 1:30-2:30pm  Or by email or discussion board. |

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| REQUIRED TEXTBOOK(S):  **Clinical Laboratory Science**, Turgeon, 8th Ed. Mosby Publisher. ISBN 0-323-03412-8  Older editions can be used but the reading list is for the 8th  edition |

LEARNING OBJECTIVES/COURSE OUTCOMES

1. Discuss routine laboratory tests, perform calculations and evaluate laboratory test methods and results.
2. Participate in team activities and demonstrate professional behaviors
3. Recognize safety policies and guidelines outlined by SCC, OSHA and other regulatory agencies
4. Given a probable diagnosis, explore related laboratory test results
5. Give the principle of each routine laboratory test procedure.

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| READING AND ONLINE LECTURE   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | WEEK/ONLINE LECTURE | CHAPTERS | 8th EDITION |  |  |  | | 2  Introduction to the clinical lab  Medical Terminology | Chapter 1 Fundamentals  Chapter 2 Safety  Chapter 5 Microscope | p. 1-15  p. 16-51  p. 113-129 |  |  |  | | 3  Lab math, pipetting and smear preparation | Chapter 6 Pipettes  Chapter 7 Dilutions  Chapter 11 Blood Smears | p. 138-159  p. 169-179  p. 322-323 |  |  |  | | 4  Intro to Clinical Chemistry and Quality Assurance | Chapter 10 Glucose  Chapterv8 Spectrophotometers  Chapter 3 Standard Deviation | p. 246-254  p. 183-190  p. 65-68 |  |  |  | | 5  Intro to Clinical Hematology | Chapter 11 Hemoglobin  **Quiz 1 - ONLINE** | p. 308-312 |  |  |  | | 6  Intro to Immunology and Serology | Chapter 11 Hematocrit  Chapter 4 Capillary Puncture  Chapter 16 HCG  Chapter 16 Mono Test | p. 311-312  p. 97-98  p. 222  p. 570-572 |  |  |  | | 7  Blood Collection | Chapter 4 Specimen Collection  Chapter 15 Micro set up and staining | p. 82-104  p. 487-494 |  |  |  | | 8  ESR and cell ID | Chapter 17ABO  Chapter 11 ESR  **Quiz 2 – ONLINE** | p. 605  p. 320 |  |  |  | | 9  Urinalysis | Chapter 13 urinalysis | p. 396-412 |  |  |  | | 10  Urinary system | Chapter 13UA microscopics  **Quiz 3 - ONLINE** | p. 413-443 |  |  |  | | 11  Review for final | **Final Exam - online** |  |  |  |  | |  |  |  |  |  |  |   **There is a wealth of information in this book. I have listed the important readings for this course. My suggestion is to save this book for a reference for the MLT Program**  **EXAM and assignment points**  **Points (approximate)**  **Quiz 1 Online TBA Week 5 25**  **Quiz 2 Online TBA Week 8 28**  **Quiz 3 Online TBA Week 10 30**  **Final Exam Online TBA Week 11 100**  **Discussions 24 approx**  **Assignments 40 approx**  **Tutors 5**  **Point totals are subject to change.** |

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| **Student Grading: Official, Unofficial Withdrawal**  A “W” grade is given when the student withdraws from a class during the third and fourth weeks of the quarter (third week in summer). The “W” is not used in GPA calculation.  Students who attend briefly, barely, or not at all and who fail to withdraw with a “W” grade will receive a “V” grade. This grade will be computed as 0.0 in GPA calculations.  Incomplete Contract  If circumstances prevent fulfilling requirements prior to the last day of finals week and most of the lab exercises, journal reports and resumes have been completed satisfactorily, an incomplete contract may be completed with the instructor that specifies:  1. That the course requirements can be completed with no additional instruction.  2. Requirements that student must fulfill in order to convert the incomplete grade to the pass grade. Time frame in which course requirements must be completed.  3. This time frame is not to exceed one calendar year from the date of contract.  Failure to complete requirements will result in the grade being calculated using the available scores.  MLT Program Grading Scale:  **GRADING SCALE**  Percent Grade Point Percent Grade Percent  100 4.0  99 4.0 79 2.6  98 4.0 78 2.6  97 3.9 77 2.5  96 3.8 76 2.4  95 3.7 75 2.4  94 3.7 74 2.3  93 3.6 73 2.2  92 3.5 72 2.2  91 3.5 71 2.1  90 3.4 70 2.0  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_C  89 3.3 69 1.9  88 3.2 68 1.9  87 3.2 67 1.8  86 3.1 66 1.8  85 3.0 65 1.7  84 3.0 64 1.6  83 2.9 63 1.6  82 2.8 62 1.5  81 2.8 61 1.4  80 2.7 60 1.4  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_B \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_D |

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| Lab Course only: Human Subject Permission required for all MLT laboratory courses. See MLT Student Handbook for form. Form submitted during orientation meeting and on file in student folder. |

**SEMINAR CLASS** – ONLINE CHAT IN CANVAS TUESDAYS 12-1250PM

Seminar classes will be held each week. These are optional, participate if you have questions.

This will be a question and answer session – no lectures will be given.

Review all the lecture material, submit discussions and assignments. Attend chat if you have further questions or material you would like to discuss

ONLINE EXAMS

Students are expected to take exams during the scheduled time frame.

Check the modules or the calendar to see when the exam is available. These are not open book and not a group test – you should take these as if you were taking them in the classroom. They will be one question at a time with no backtracking. Questions and answers are randomized. Watch your time – the test will close when the time limit is reached.

The MLT Program at SCC prepares students to pass the ASCP Board of Certification (BOC) Examination. Failure to do your own work will jeopardize your acceptance into the program. Medical Laboratory Technicians are trained to perform intricate testing that physicians use to diagnose patients. A complete understanding of all material is essential for you to perform tests and aid physicians in this endeavor. This will be stressed throughout the quarter, following directions and completing assignments on time will help you to develop these skills. Points will be deducted if you do not follow instructions**. No late work will be accepted.**

Any questions concerning expectations for this class should be addressed to your instructor. I am available during lecture and lab chat times , email and discussion board.

When we are allowed back on campus I will post office hours and will be available for appointments.

This class is a taste of what the full MLT Program is all about. It will help you to decide whether this is the field for you. You will learn a lot of new information and develop many skills. I hope it will be an enjoyable and instructional experience for everyone.

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| **SUSPENDED OPERATIONS**  If weather conditions warrant class cancellation or suspending operations, here’s what will happen:  Listen to KIRO, KING or KOMO radio and television stations for broadcast of closure due to inclement weather. Broadcast announcements specify that “all operations are closed” or “classes are canceled.” All students should consider their own personal safety when dealing with inclement weather. Your physical well being is of primary importance to the college.  In the event that class cannot be held as scheduled due to inclement weather or other unforeseen circumstances, the student is still responsible for completing the assignments for that date. Additional online assignments may be given by your instructor. Please check Canvas and email.  When a prolonged absence from scheduled classes due to unforeseen circumstances occurs, the assignments will be discussed at the next scheduled class, along with the assignments scheduled to be completed for that scheduled class. Your instructor may email or post an announcement concerning work missed on that day. |

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| **CHEATING AND PLAGIARISM POLICY #5030 DISHONESTY IN ACADMEICS**  Shoreline Community College has a long-standing policy which prohibits cheating and plagiarism (Policy 5030 - Student Conduct and Discipline). Copies of Policy 5030 are available through program coordinators, Division Chairpersons, Vice President of Student Affairs, the Student Government Office and the Library. Within the Health, Physical Education & Athletics Division, plagiarism is defined as “presenting material that is not your own without crediting its source or author.” Cheating is defined as “acting dishonestly, deceiving by trickery, attempting to mislead or fool.” Any acts of cheating or plagiarism will be handled according to College Policy 5030.  For this class, any incident of cheating, plagiarism or dishonest activity will jeopardize continuation in the MLT Program. The instructor personally feels that there is no place in health care for those who cheat. The instructor will not authorize any student caught cheating to take any certification or licensure examination. |

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| REASONABLE ACCOMMODATION  OF STUDENTS WITH DISABILITIES  Students with disabilities have the right to request and receive reasonable  accommodations to ensure access to programs and facilities at Shoreline Community  College. To receive reasonable accommodations, students are responsible for requesting  accommodations and documenting the nature and extent of their disability in a timely  manner. Students should direct their requests for reasonable accommodation to the  Services for Students with Disabilities office. (State of Washington Laws of 1994, Ch.  105, Washington Core Services.)  Reasonable accommodations under this policy include, but are not limited to:  Academic adjustments, such as modification and flexibility in test taking  arrangements;  Adjustments in nonacademic services and other rules; and,  Auxiliary aids and services  Shoreline Community College will make those modifications to its academic  requirements that (1) are necessary to ensure that those requirements do not discriminate,  or have the effect of discriminating, against a qualified student with a disability based on  that disability and (2) do not impose an undue hardship on the College or require alteration of essential program requirements.  Appropriate academic adjustments/reasonable accommodations will be provided to  qualified students with disabilities participating in the following activities: recruitment,  the application process, enrollment, registration, financial aid, course work, academic  counseling, and nonacademic programs and services |

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| **MLT 181 OBJECTIVES**  FUNDAMENTALS OF THE CLINICAL LAB  Upon completion of this section, the student will:   1. Know the general departments of the lab and some tests performed 2. List regulating agencies and the role of CLIA, and credentials of Lab professionals 3. Define HIPAA as it relates to lab results 4. Understand Safety Rules 5. Be knowledgeable in the use and care of the microscope   Upon completion of this section, the student will:   1. Identify laboratory terminology by use of prefixes, suffixes and root word definitions. 2. List common acronyms used in laboratory departments.   METRIC SYSTEM, LAB EQUIPMENT, HEMACYTOMETER, BLOOD SMEARS AND REAGENT PREP  Upon completion of this section students will:   1. Understand the metric system, definitions of prefixes, and conversions from F to C 2. Know the difference between accuracy and precision 3. Be able to perform serial dilutions and other lab calculations 4. Have a general awareness of glassware used in the lab 5. Know what a hemacytometer is used for 6. Understand how to make a good blood smear 7. Understand the use of significant figures   QUALITY ASSURANCE AND QUALITY CONTROL  Upon completion of this section students will:   1. Know the difference between QA and QC 2. Define standard, calibrator and control and when they are used in the lab 3. Understand SD, Levey Jennings charts and know the difference between a trend and shift 4. Define a reference range 5. Know general parts of the spectrophotometer 6. Understand glucose testing for student lab   INTRODUCTION TO HEMATOLOGY  Upon completion of this section students will:   1. Know how to perform a capillary puncture for microhematocrit determination 2. Understand the function and structure of hemoglobin 3. Review Laboratory Hemoglobin determinations 4. Give examples of pre, post and analytical errors   INTRODUCTION TO IMMUNOLOGY AND SEROLOGY  Upon completion of this section students will:   1. Relate Antibody/Antigen reaction to testing 2. Understand Resistance and Immunity 3. Define Humoral and Cellular immunity 4. Understand primary and secondary responses 5. Define specificity and sensitivity 6. Review HCG and Mono testing   BLOOD COLLECTION, SMEAR PREP AND ESRS  Upon completion of this section students will:   1. Receive a background in venipuncture, including needles and tube types 2. State the difference between capillary, venous and arterial blood collection 3. Understand the importance of a quality blood specimen, storage and processing 4. Define ESR and know factors which can effect ESR results   STAINING AND ESR PROCEDURES  Upon completion of this section students will:   1. Have an in depth understanding of ESR’s and its use in the lab 2. Review Staining of blood smears and what constitutes a good “feather edge” 3. Know general references ranges for normal WBC’s 4. Identify the 5 types of normal WBC’s seen in the peripheral blood   URINALYSIS  Upon completion of this section students will:   1. Understand the parts and functions of the kidney and nephron 2. Describe the process of urine formation 3. Relate UA dipstick results to chemicals in the urine and review backup testing 4. Understand the microscopic exam of urine and criteria for a urine culture set up 5. Be able to identify by characteristics the following:    1. Glomerulonephritis    2. Tubular diseases    3. Renal Vascular diseases    4. Cystitis 6. Understand the role of urinalysis for Diabetes and Liver disease 7. Discuss urine drug screening and collection of specimen |