

Histology Techniques – HLT 110

3 Credits

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Office hours by appointment

T/Th: 11:40 AM to 2:30 PM

Course Description

Detailed description of methods employed in sectioning of tissue embedded in the following media: paraffin, celloidin, and plastic. Topics include instrumentation, knife sharpening, sectioning, adhesives, difficult tissue, artifacts and decalcification.

Objectives

This course is designed to familiarize students with methods employed in tissue sectioning, bone decalcification and embedding. This information enables the students to make a smooth transition from the classroom to the clinical setting.

Texts

Sheehan, Dezna C., Theory and Practice of Histotechnology, Battelle Press, 505 King Avenue, Columbus, Ohio.

Carson, Frieda, Histotechnology: A Self-Instructional Text. Chicago, Ill: ASCP Press

Teaching Strategies

- Lectures
- Classroom discussions
- Review activities
- Tests & quizzes

Learning Outcomes

Upon completion of the course the student will be able to:

- a. discuss five different types of microtomes and components, explain the principles of operation, initiate effective trouble-shooting techniques and perform maintenance and quality control on each.
- b. list the materials used in the manufacture of microtome knives, define the five angles introduced by the knife profiles and follow established safety procedures when handling microtome knives.
- c. identify materials used in knife sharpening
- d. determine the quality of the microtome knife edge.
- e. appraise the equipment used in paraffin sectioning.
- f. discuss the practical aspects of microtomy and explain the importance of rough cutting, soaking procedures, tissue flotation, serial sections, quality control and trouble-shooting in paraffin sectioning.
- g. differentiate between the purpose of reagents and ingredients used in bone decalcification.

Affective Domain Outcomes

- a. Complete requested data appropriately.
- b. Follow instructor's directions and is punctual.
- c. Willingly accept constructive criticism.
- d. Be tactful with others (students, instructors, and staff).
- e. Display effective communications in the classroom.

Course Outline

Week #	Topics Covered	Assignments/Reading
Week 1	<i>Unit 1 Paraffin Sectioning:</i> Instrumentation	<u>Sheehan</u> : Pages 20-21 <u>Carson</u> : Pages 48-59, 98-101
Week 2	<i>Unit 2 Paraffin Sectioning:</i> Tissue Handling, Slide Adhesives, Cutting Ribbons <i>Unit 3 Paraffin Sectioning</i> Tissue Handling, Difficult Tissue	<u>Quiz Unit 1</u> <u>Sheehan</u> : Pages 72-85 <u>Carson</u> : Pages 50-53 <u>Quiz Unit 2</u>
Week 3	<i>Unit 4 Paraffin Sectioning:</i> Tissue Handling, Sectioning Difficulties <i>Unit 5 Paraffin Sectioning</i> Knife Sharpening	<u>Quiz Unit 3</u> <u>Sheehan</u> : Pages 21-39, 60 – 63, 86 – 88, 132 – 136 <u>Carson</u> : Pages 28 - 31, 48-52 <u>Quiz Unit 4</u>
Week 4	Unit 6 Clearing & Mounting Media - Coverslips Unit 7 Glassware, Solution Preparation, Staining Problems, Control Tissues	<u>Quiz Unit 5</u> <u>Sheehan</u> : - pp 60-63, <u>Carson</u> - pp 89 – 102 <u>Quiz Unit 6</u>
Week 5	Midterm exam <i>Unit 8 Embedding:</i> Introduction to Paraffin Embedding, Properties	<u>Quiz Unit 7 and Midterm Exam</u> <u>Sheehan</u> – pp. 2-14, 63-68, 72-74, 79, 82 <u>Carson</u> – pp. 31-37
Week 6	<i>Unit 9 Paraffin Embedding:</i> Waxes, Resins <i>Unit 10 Paraffin Embedding:</i> Instrumentation, Scheduling	<u>Quiz Unit 8</u> <u>Sheehan</u> – pp. 69-75 <u>Carson</u> – pp. 34-35 <u>Quiz Unit 9</u>
Week 7	<i>Unit 11 Decalcification:</i> Introduction, Principles, Methods End-point Determination, Treatment Following Decalcification	<u>Quiz Unit 10</u> <u>Sheehan</u> : Pages 89-96 <u>Carson</u> : Pages 38-41
Week 8	Quiz Unit 11 and Final Exam	

Histology Techniques – HLT 110 Attendance Policy

Tests:

All examinations/competencies are to be taken on the designated day. Any student arriving late to the exam without prior permission from the instructor may not be allowed to take the exam. If the student is permitted to take the exam, the student must complete the exam within the time allotted by the professor.

Quizzes:

There are no make-up quizzes. Students with an unexcused absence on the day of a quiz will be assigned a "0".

Grade Calculation:

50% of final grade = average score on quizzes

25% of final grade = score on midterm examination

25% of final grade = score on final examination

Attendance:

Lecture and student participation are essential for an understanding of the course material. **If a student misses more than two (2) classes, the student will be given a failing grade, regardless of whether or not the absences are excused.** Multiple absences (2) may result in a decrease in the student's final grade.

Late arrivals and early dismissals are at the discretion of the instructor.

Student's Name _____

Student's Signature _____ Date _____