Sentara®

School of Histotechnology

Curriculum Guide

Student Handbook

School/Student Catalog

Class: June 2024- December 2024

School of Histotechnology

2010 Health Campus Drive
Harrisonburg, VA. 22801

Office and Lectures:
1401 Technology Drive
Office Phone: (540) 564-7232
Office Fax: (540) 437-0517
Web Site:
www.sentara.com/histotechnologyschool

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Sentara RMH School of Histotechnology
June to December 2024

The Sentara RMH School of Histotechnology is certified to operate by the State Council of Higher Education for Virginia (SCHEV).

The Sentara RMH School of Histotechnology is accredited by NAACLS.
(773) 714-8880, www.naacls.org.

NAACLS
5600 N. River Road
Suite 720
Rosemont, IL. 60018-5119

Section #	Table of Contents

Sentara RMH School of Histotechnology

(Revised 6/2/2020)

Chief Administrator/Officer of School

Douglas J. Moyer

Sentara RMH Medical Center President
and
Corporate Vice President Sentara Healthcare

Duties and responsibilities of the officer above is ultimate administration of Sentara RMH School of Histotechnology and School of Medical Laboratory Science.

Sentara RMH School of Histotechnology

Policy/Procedure When Applied Experience Cannot be Guaranteed

(Revised 6/2/2020)

Selection of students will be limited annually to the number of slots available on clinical rotation.

Because of the large number of hospitals in the Sentara System, there should always be rotation slots to accommodate students for rotation should a disaster occur in one of the hospitals.

With regard to the didactic portion of the program, if the Sentara RMH School of Histotechnology would close, the lectures on file along with Power Points for the entire curriculum would be available to another Sentara Facility and their Lab departments. These certified histotechnologists could complete the didactic portion for the remaining months until the current class had finished the program.

The following is a list of all the hospitals in the Sentara Healthcare System:

Sentara Albemarle Medical Center- Elizabeth City, NC
Sentara CarePlex Hospital- Hampton, VA
Sentara Halifax Regional Hospital- South Boston, VA
Sentara Leigh Hospital- Norfolk, VA
Sentara Martha Jefferson Hospital- Charlottesville, VA
Sentara Norfolk General Hospital- Norfolk, VA
Sentara Northern Virginia Medical Center- Woodbridge, VA
Sentara Obici Hospital- Suffolk, VA
Sentara Princess Anne Hospital- Virginia Beach, VA
Sentara RMH Medical Center- Harrisonburg, VA
Sentara Virginia Beach General Hospital- Virginia Beach, VA
Sentara Williamsburg Regional Medical Center- Williamsburg, VA

Further details of the didactic and rotation completion would be formulated if a closing of Sentara RMH School of Histotechnology should occur.

There is an affiliation agreement between Sentara RMH School of Histotechnology and all of the Sentara Hospitals.

Sentara RMH School of Histotechnology and Medical Laboratory Science

Retention Policy in Event of Schools' Closure or Revocation of Certification

(Revised 6/2/2020)

In the event of schools closure or revocation of certification, the schools shall make provisions for transferring all official records of students to the council office, or secure location that will maintain the records permanently, notify all students of this location and how they may obtain official copies. The records transferred to the council office, or other depository, shall include the academic records of each student, which should include:

1. Academic transcripts showing the basis of admissions, transfer credits, courses, credit, grades, graduation authorization, and student name changes for each student;
2. As no financial aid is offered to the students, there will be no record of transcripts of financial aid;
3. Foreign student forms for foreign students;
4. Veterans Administration records for veterans;
5. Copies of certificates awarded;
6. One set of course descriptions for all courses offered by the school;
7. Copy of NAACLS accreditation during the years covered by transcripts.

The schools shall notify all enrolled students of the pending closure immediately, describing their financial obligations as well as their right s to a refund or adjustment, and provisions made for assistance toward completion of their academic programs, whether by the institution that is closing, or by contract with another institution or organization to teach out the educational programs.

This policy is in addition to the schools policy on "if applied experience cannot be guaranteed."

Sentara RMH School of Histotechnology

Harrisonburg, Virginia

(Revised 8/24/2020)

Sentara RMH Medical Center, founded in 1912, is located in Harrisonburg, Va. Sentara RMH is a not-for-profit, community-based regional healthcare facility licensed for 266 beds and fully accredited by DNV. Sentara Healthcare is a not-for-profit healthcare organization serving Virginia and northeastern North Carolina. It is based in Norfolk, Virginia and offers services in 12 acute care hospitals with more than 300 sites of care all throughout Virginia and northeastern North Carolina and beyond.

The Sentara RMH HTL Program was established in 2014 to address a severe national shortage of certified Histotechnologists. The program runs for one calendar year and includes six months of lecture and student lab followed by six months of rotation through a hospital histology lab. Clinical rotations are provided by the Histology departments at the following Sentara hospitals; Sentara Martha Jefferson Hospital and Sentara Norfolk General Hospital.

Block teaching is utilized in the didactic segment of the program with progression of courses from Fixation, Processing/Embedding, to Microtomy to Staining. Students choose the hospital for their clinical rotation during the application process on a first come-first serve basis. During the clinical rotation, students learn by working alongside the histology professionals in the department.

Entering students will be required to have a bachelor's degree with a minimum of 30 credits in biology and chemistry (minimum of 12 credits in each of chemistry and biology) prior to beginning the program or be guaranteed a degree from their college or university upon completion of the program. A certificate will be awarded at the completion of the school.

Sentara RMH School of Histotechnology

Harrisonburg, Virginia

MISSION STATEMENT

(Revised 6/2/2020)

It is the mission of the Sentara RMH School of Histotechnology to graduate beginning histotechnologists with the skills, knowledge, motivation, and insight to excel in the practice of histology laboratory medicine, and to pass national certification examinations. These graduates will be motivated to continue their education, and to become our future educators, leaders, innovators and managers in the histology laboratory. The school will remain on the cutting edge of laboratory education providing the students with the curriculum that is current, safety conscious, and responsive to the dynamic health care environment.

The school's purpose includes an emphasis of 98% on instruction, 2% on research in the form of lectures during the education course, and 0% on public service.

Sentara RMH School of Histotechnology

Program Goals

(Revised 6/2/2020)

- Graduation of histotechnologists who can pass the ASCP HTL Certification Exam.
- Provide a safe atmosphere that encourages learning via various styles and assessing that knowledge.
- Graduates will have the necessary skills to perform and manage clinical histology laboratories.
- Graduates will possess superior skills to become educators and leaders in the field of histotechnology.
- Graduates will exhibit high degrees of professionalism and personal confidence resulting in positive representation of histotechnology in the health care arena.
- The school will provide clinical rotations that reinforce technical skills and knowledge resulting in a successful practicing histotechnologists.

Sentara RMH School of Histotechnology

Harrisonburg, Virginia

Faculty

Cyndee Lowe, MLS(ASCP)^{CM}, M.A.
Program Director, Sentara RMH School of Histotechnology

Shana Splawn, HTL(ASCP)^{CM}, M.B.A.
Education Program Coordinator, Sentara RMH School of Histotechnology Instructor

Abigail Blosser, MLS(ASCP)^{CM}, B.S.
Education Program Coordinator, Sentara RMH School of Medical Laboratory Science

Sentara Norfolk General Hospital Practicum Instructors

Jessica Linhardt, HTL(ASCP)
Clinical Liaison

Kenneth McClellan, HT(ASCP), CT, B.S.

Michael Chan, HT(ASCP), B.S.

Martha Jefferson Hospital Practicum Instructors

Allison Alger, HTL(ASCP)
Senior Laboratory Histologist

Sentara RMH School of Histotechnology

Harrisonburg, Virginia

Faculty Selection Policy

(Revised 6/2/2020)

The selection of faculty for the Sentara RMH School of Histotechnology is based on the following criteria:

1. Interest in education
2. Teaching ability
3. Two years of histology laboratory experience
4. Certification - HT(ASCP), preferred HTL(ASCP)^{CM}, education, and continuing education

In selection of faculty, the Sentara RMH School of Histotechnology does not discriminate on the grounds of race, color, religion, national origin, sex, age, marital status, sexual orientation, family responsibilities, or political affiliation.

It is recommended that faculty have a minimum of a B.S. degree (Master's Degree preferred) and national certification HT(ASCP), with HTL (ASCP) ^{CM} preferred.

Sentara RMH School of Histotechnology

Outcome Measures

(Revised 6/2/2020)

The school does the following to evaluate and improve the program success to be consistent with the mission of the school:

1. Monitor and report pass rate on ASCP Certification Exam.

2. Monitor placement rates of graduates.

3. Monitor attrition rates.

4. Send out questionnaires to:
   - Students
   - Graduates
   - Faculty
   - Employers
   - Advisory Committee

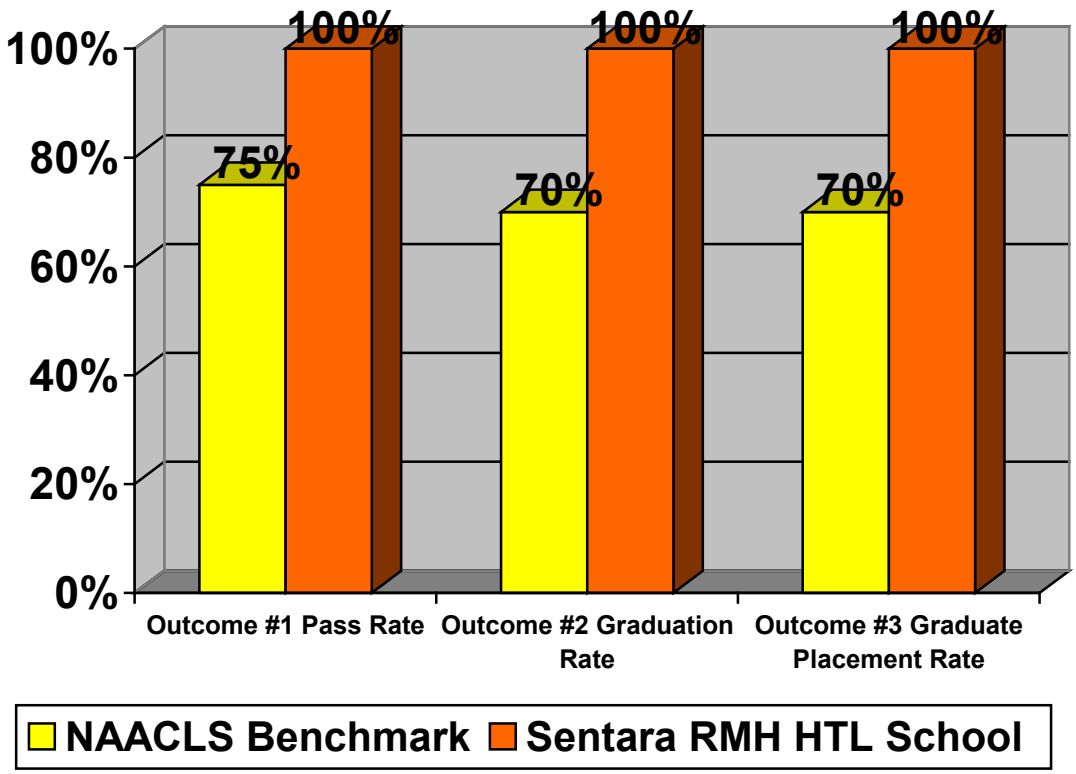
5. Monitor graduation rate for each class.

Sentara RMH School of Histotechnology

Program Outcome Measures 2023

(Updated 5/6/2024)

Percentages reflect all students graduated in 2023	
Certification Pass Rate	100%
Graduation Rate	100%
Placement Rate	100%



Sentara RMH School of Histotechnology

Academic Calendar

(Revised 6/2/2020)

The academic calendar includes all the time from the beginning of class in January or June to the graduation date in December or June respectfully. This includes approximately 12 months with 6 months of didactic and 6 months of clinical/rotation per calendar year.

June 2024

May '24

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

July '24

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17 HTL & MLS Welcome 1:30 HTL Orientation 1	18 9:00 HTL Orientation 2 1:30 Microtomy 1	19 9:00 HTL Orientation 3 1:30 P&E 1	20 9:00 HTL Orientation 4 1:30 P&E 2	21 9:00 HTL Orientation 5 1:30 Microtomy 2	22
23	24 9:00 Orientation Final 1:30 P&E 3	25 9:00 Lab/Study 1:30 Microtomy Exam	26 9:00 Lab/Study 1:30 P&E Exam	27 9:00 Microanatomy 1 1:30 P&E 4	28 9:00 Microtomy 3 11:00 Lab	29
30	1	Notes				

July 2024

June '24

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

August '24

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	1 9:00 Microanatomy 2 1:30 P&E 5	2 9:00 Microtomy 4 11:00 Lab	3 9:00 Microanatomy 3 1:30 P&E 6	4 No Class Due to 4th of July	5 No Class	6
7	8 9:00 Microanatomy 4 1:30 P&E Exam	9 9:00 Microtomy Exam 11:00 Lab	10 9:00 Microanatomy 5 1:30 P&E 7	11 9:00 Microtomy 5 11:00 Lab	12 9:00 Microanatomy Exam 1:30 P&E 8	13
14	15 9:00 Microanatomy 6 1:30 P&E Exam	16 9:00 Microtomy 6 11:00 Lab	17 9:00 Microanatomy 7 1:30 P & E 9	18 9:00 Microtomy Exam 11:00 Lab	19 9:00 Microtanatomy 8 1:30 P&E 10	20
21	22 9:00 Microanatomy Exam 1:30 P&E 11	23 9:00 Microtomy 7 11:00 Lab	24 9:00 Microanatomy 9 1:30 P&E Exam	25 9:00 Microtomy 8 11:00 Lab	26 9:00 Microanatomy 10 1:30 P&E Review	27
28	29 9:00 Microanatomy 11 1:30 P&E Final	30 9:00 Microtomy Exam 11:00 Lab	31 9:00 Microanatomy Exam 11:00 Lab	1	2	3
4	5	Notes				

August 2024

July '24

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

September '24

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29	30	31	1 9:00 Microtomy Review 11:00 Lab	2 9:00 Microanatomy Review 1:30 Fixation 1	3
4	5 9:00 Microanatomy Final 1:30 Fixation 2	6 9:00 Microtomy Final 1:30 Stains 1	7 9:00 Fixation Exam 1:30 Education 1	8 9:00 Education 2 1:30 Stains 2	9 9:00 Fixation 3 11:00 Lab	10
11	12 9:00 Fixation 4 1:30 Education Final Week	13 9:00 Stains 3 11:00 Lab	14 9:00 Fixation 5 11:00 Lab	15 9:00 Stains Exam 11:00 Lab	16 9:00 Fixation Exam 1:30 Stains 4	17
18	19 9:00 Microanatomy Review 1:30 Management 1	20 9:00 Fixation 6 1:30 Stains 5	21 9:00 Microanatomy Final 1:30 Management 2	22 9:00 Fixation 7 1:30 Management 3	23 9:00 Fixation 8 1:30 Stains Exam	24
25	26 9:00 Fixation Exam 11:00 Stains 6	27 9:00 Management 5 11:00 Lab	28 9:00 Stains 7 11:00 Lab	29 9:00 Management Exam 11:00 Lab	30 9:00Stains 8 11:00 Lab	31
1	2	Notes				

September 2024

August '24

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

October '24

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2 No Class Labor Day	3 9:00 Stains Exam 11:00 Fixation Review	4 9:00 Management 5 11:00 Lab	5 9:00 Stains 9 11:00 Fixation Final	6 9:00 Management 6 11:00 Lab	7
8	9 9:00 Stains 10 11:00 Lab	10 9:00 Management 7 11:00 Lab	11 9:00 Stains 11	12 9:00 Management 8 11:00 Lab	13 9:00 Stains 12	14
15	16 9:00 Stains 13 11:00 Lab	17 9:00 Management Final 1:00 Stains 14	18 9:00 Stains Exam 11:00 Lab	19 9:00 IHC 1 11:00 Lab	20 9:00 Stains 15 11:00 Lab	21
22	23 9:00 Stains 16 11:00 Lab	24 9:00 IHC 2 11:00 Lab	25 9:00 Stains 17 11:00 Lab	26 9:00 IHC 3 11:00 Lab	27 9:00 Stains 18 11:00 Lab	28
29	30 9:00 Stains 19 11:00 Lab	1	2	3	4	5
6	7	Notes				

October 2024

September '24

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

November '24

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29	30	1 9:00 IHC 4 11:00 Lab	2 9:00 Stains Exam 11:00 Lab	3 9:00 IHC 5 11:00 Lab	4 9:00 Stains 20 11:00 Lab	5
6	7 9:00 Stains 21 11:00 Lab	8 9:00 IHC Exam 11:00Lab	9 9:00 Stains 22 11:00 Lab	10 9:00 IHC 6 11:00 Lab	11 9:00 Stains 23 11:00 Lab	12
13	14 9:00 Stains 24 11:00 Lab	15 9:00 IHC 7 11:00 Lab	16 9:00 Stains Exam 11:00 Lab	17 9:00 IHC 8 11:00 Lab	18 9:00 Stains 25 11:00 Lab	19
20	21 9:00 Stains 26 11:00 Lab	22 9:00 IHC 9 11:00 Lab	23 9:00 Stains 27 11:00 Lab	24 9:00 IHC Exam 11:00 Lab	25 9:00 Stains Exam 11:00 Lab	26
27	28 9:00 Stains 28 11:00 Lab	29 9:00 IHC 10 11:00 Lab	30 9:00 Stains 29 11:00 Lab	31 9:00 IHC 11 1:30 Stains 30	1	2
3	4	Notes				

November 2024

October '24

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

December '24

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27	28	29	30	31	1 9:00 Stains 31 1:30 Education 1	2
3	4 9:00 Stains Exam 1:30 Education 2	5 9:00 IHC 12 1:30 Stains Review	6 9:00 Education Final 1:30 Management 1	7 9:00 IHC 13 1:30 Stains Final	8 9:00 Management 2 11:00 Lab/Study	9
10	11 9:00 IHC Exam 11:00 Lab	12 9:00 Management 3 11:00 Lab/Study	13 9:00 IHC 14 11:00 Lab	14 9:00 Management Exam 11:00 Lab	15 9:00 IHC 15 11:00 Lab	16
17	18 9:00 IHC 16 11:00 Lab	19 9:00 Management 4 11:00 Lab	20 9:00 IHC 17 11:00 Lab	21 9:00 IHC Exam 1:30 Management 5	22 9:00 IHC Review 11:00 Lab	23
24	25 9:00 IHC Final 11:00 Lab	26 9:00 Lab/Study	27 NO CLASS	28 THANKSGIVING	29 NO CLASS	30
1	2	Notes				

December 2024

November '24

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

January '25

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2 9:00 Management 6 11:00 Lab	3 9:00 Management 7 11:00 Lab	4 9:00 Management 8 11:00 Lab	5 9:00 Management Final	6	7
8	9 Rotation 1	10 Rotation 1	11 Rotation 1	12 Rotation 1	13 Rotation 1	14
15	16 Rotation 2	17 Rotation 2	18 Rotation 2	19 Rotation 2	20 Rotation 2	21
22	23 Holiday Break	24 Holiday Break	25 Holiday Break	26 Holiday Break	27 Holiday Break	28
29	30 Holiday Break	31 Holiday Break	1	2	3	4
5	6	Notes				

January 2025

December '24

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

February '25

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29	30	31	1 Holiday Break	2 Holiday Break	3 Holiday Break	4
5	6 Rotation 3	7 Rotation 3	8 Rotation 3	9 Rotation 3	10 Rotation 3	11
12	13 Rotation 4	14 Rotation 4	15 Rotation 4	16 Rotation 4	17 Rotation 4	18
19	20 Rotation 5	21 Rotation 5	22 Rotation 5	23 Rotation 5	24 Rotation 5	25
26	27 Rotation 6	28 Rotation 6	29 Rotation 6	30 Rotation 6	31 Rotation 6	1
2	3	Notes				

February 2025

January '25

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

March '25

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	29	30	31	1
2	3 Rotation 7	4 Rotation 7	5 Rotation 7	6 Rotation 7	7 Rotation 7	8
9	10 Rotation 8	11 Rotation 8	12 Rotation 8	13 Rotation 8	14 Rotation 8	15
16	17 Rotation 9	18 Rotation 9	19 Rotation 9	20 Rotation 9	21 Rotation 9	22
23	24 Rotation 10	25 Rotation 10	26 Rotation 10	27 Rotation 10	28 Rotation 10	1
2	3	Notes				

March 2025

February '25

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

April '25

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
23	24	25	26	27	28	1
2	3 Rotation 11	4 Rotation 11	6 Rotation 11	7 Rotation 11	8 Rotation 11	9
10	11 Rotation 12	12 Rotation 12	13 Rotation 12	14 Rotation 12	15 Rotation 12	16
17	18 Rotation 13	19 Rotation 13	20 Rotation 13	21 Rotation 13	22 Rotation 13	23
24	25 Rotation 14	26 Rotation 14	27 Rotation 14	28 Rotation 14	29 Rotation 14	30
31	1	Notes				

April 2025

March '25

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

May '25

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	31 Rotation 15	1 Rotation 15	2 Rotation 15	3 Rotation 15	4 Rotation 15	5
6	7 Rotation 16	8 Rotation 16	9 Rotation 16	10 Rotation 16	11 Rotation 16	12
13	14 Rotation 17	15 Rotation 17	16 Rotation 17	17 Rotation 17	18 Rotation 17	19
20	21 Rotation 18	22 Rotation 18	23 Rotation 18	24 Rotation 18	25 Rotation 18	26
27	28 Rotation 19	29 Rotation 19	30 Rotation 19	1	2	3
4	5	Notes				

May 2025

April '25

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

June '25

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27	28	29	30	1 Rotation 19	2 Rotation 19	3
4	5 Rotation 20	6 Rotation 20	7 Rotation 20	8 Rotation 20	9 Rotation 20	10
11	12 Rotation 21	13 Rotation 21	14 Rotation 21	15 Rotation 21	16 Rotation 21	17
18	19 Rotation 22	20 Rotation 22	21 Rotation 22	22 Rotation 22	23 Rotation 22	24
25	26 Memorial Day	27 Rotation 23	28 Rotation 23	29 Rotation 23	30 Rotation 23	31
1	2	Notes				

June 2025

May '25

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

July '25

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2 Rotation 24	3 Rotation 24	4 Rotation 24	5 Rotation 24	6 Rotation 24	7
8	9 Comprehensive Final	10	11 Gradutation	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5
6	7	Notes				

Sentara RMH School of Histotechnology

Harrisonburg, Virginia

Orientation Materials Checklist

(Revised 6/2/2020)

Name: Date:

- ☐ Copy of License
- ☐ Copy of Health Insurance
- ☐ Copy of COVID vaccine card
- ☐ Enrollment Agreement
- ☐ Essential Functions
- ☐ Honor Code
- ☐ Health and Safety Policy
- ☐ Confirmation of Knowledge
- ☐ Non-Patient Photo and Video Release
- ☐ Statement of Responsibility & Confidentiality
- ☐ Online Orientation Training
- ☐ Virtual Day 2 Orientation Record

Sentara RMH School of Histotechnology
2010 Health Campus Drive
Harrisonburg, VA 28801
(Phone) 540-564-7232
(Fax) 540-437-0517
(Web Site) www.sentara.com/histotechnologyschool
(E-Mail) CSLOWE@SENTARA.COM

ENROLLMENT AGREEMENT

STUDENT INFORMATION

STUDENT NAME: _____

ADDRESS: _____

CITY/STATE/ZIP: _____

TELEPHONE #'S: H: _____C:_____W:_____

E-MAIL:_____

SOCIAL SECURITY #:_____

EMERGENCY CONTACT: _____

RELATIONSHIP: _____TELEPHONE #:_____

PROGRAM INFORMATION

DATE OF ADMISSION: ____/_____/_____ PROGRAM/COURSE: _____
MO DAY YEAR

PROGRAM START DATE: _____ANTICIPATED END DATE: _____

FULL-TIME: ☐ PART-TIME: ☐ DAY: ☐ EVENING: ☐
DAYS/EVENINGS CLASS MEETS: (CIRCLE) M T W TH F Sat Sun

TIME OF DAY/EVENING CLASS BEGINS: _____ TIME OF DAY/EVENING CLASS ENDS: _____

NUMBER OF WEEKS: _____ TOTAL CREDIT/CLOCK HOURS_____
(CIRCLE ONE)

TUITION

THE TOTAL COST OF THE SENTARA RMH MEDICAL LABORATORY SCIENCE PROGRAM

TUITION:	$_____
NON-REFUNDABLE REGISTRATION FEE:	$_____ *(may not exceed $100)*
BOOKS/SUPPLIES:	$_____
UNIFORM:	$_____
MISC. EXPENSES:	$_____

TOTAL COST: $_____

CANCELLATION REFUND POLICY

Rejection: An applicant rejected by the school is entitled to a refund of all monies paid.

Three-Day Cancellation: An applicant who provides written notice of cancellation with three (3) business days, excluding weekends and holidays, of executing the enrollment agreement is entitled to a refund of all monies paid, excluding the non-refundable registration fee.

Other Cancellations: An application requesting cancellation more than three(3) business days after executing the enrollment agreement and making an initial payment, but prior to the first day of class is entitled to a refund of all monies paid, less a maximum tuition fee of 15% of the stated cost of the course or $100, whichever is less.

Withdrawal Procedure:

A. A student choosing to withdraw from the school after the commencement of classes is to provide a written notice to the Director of the school. The notice must include the expected last date of attendance and be signed and dated by the student.

B. If special circumstances arise, a student may request, in writing, a leave of absence, which should include the date the student anticipates the leave beginning and ending. The withdrawal date will be the date the student begins leave of absence.

C. A student will be determined to be withdrawn from the institution if the student misses seven consecutive instructional days and all of the days are unexcused.

Tuition refunds will be determined as follows:

Proportion of Total Program Taught by Withdrawal Date	Tuition Refund
Less than 25%	75% of program cost
25% up to but less than 50%	50% of program cost
50% up to but less than 75%	25% of program cost
75% or more	No Refund

NOTICE TO BUYER:

1. Do not sign this agreement before you have read it or if it contains any blank spaces.
2. This agreement is a legally binding instrument.
3. You are entitled to an exact copy of this agreement and any disclosure pages you sign.
4. This agreement and the school catalog constitute the entire agreement between the student and the school.
5. The school reserves the right to reschedule the program start date.
6. The school reserves the right to terminate a student's training for unsatisfactory progress, nonpayment of tuition or failure to abide by established standards of conduct.
7. The school does not guarantee the transferability of credits to a college, university or institution. Any decision on the comparability, appropriateness and applicability of credit and whether they should be accepted is the decision of the receiving institution.

STUDENT ACKNOWLEDGMENTS:

1. I hereby acknowledge receipt of the school's catalog dated _____, which contains information describing programs offered. The school catalog is included as part of this enrollment agreement and I acknowledge that I have received a copy of this catalog.

   _____Student Initials

2. I have carefully read and received an exact copy of this enrollment agreement.

   _____Student Initials

3. I understand that the school may terminate my enrollment if I fail to comply with attendance, academic, and financial requirements or if I fail to abide by established standards of conduct, as outlined in the school catalog. While enrolled in the school, I understand that I must maintain satisfactory academic progress as described in the school catalog and that my financial obligation to the school must be paid in full before a certificate may be awarded.

   _____Student Initials

4. I understand that the school does not guarantee job placement to graduates upon program completion or upon graduation.

   _____Student Initials

5. I understand that complaints, which cannot be resolved by direct negotiation with the school in accordance to its written grievance policy, may be filed with the State Council of Higher Education for Virginia, 101 N. 14th Street, 9th Floor, James Monroe Building, Richmond, VA 23219. All student complaints must be submitted in writing.

   _____Student Initials

CONTRACT ACCEPTANCE

I, the undersigned, have read and understand this agreement and acknowledge receipt of a copy. It is further understood and agreed that this agreement supersedes all prior or contemporaneous verbal or written agreements and may not be modified without the written agreement of the student and the School Official. I also understand that if I default upon this agreement I will be responsible for payment of any collection fees or attorney fees incurred by _____ (school name).

My signature below signifies that I have read and understand all aspects of this agreement and do recognize my legal responsibilities in regard to this contract.

Signed this _____day of_____, 20_____

_____ _____
Signature of Student Date

_____ _____
Signature of School Official Date

REPRESENTATIVE'S CERTIFICATION:

I hereby certify that _____ has been interviewed by me and in my judgment, meets all requirements for acceptance as a student in the _____ (program name) at _____ (school name), as described in the school catalog. I further certify that there have been no verbal or written agreements or promises other than those appearing on this agreement.

Sentara RMH School of Histotechnology

Harrisonburg, Virginia

ESSENTIAL FUNCTIONS

(Revised 6/2/2020)

The following essential functions are required for admission to the program:

1. Manual Dexterity: Ability to use hand(s) or prosthetic devices with coordination.
2. Fine Motor: Ability to manipulate small objects with fingertips or adaptive devices.
3. Mobility: Ability to maneuver in the laboratory and around instruments and in patients care settings.
4. Vision: Ability to distinguish red, yellow, and blue colors; distinguish clear from cloudy, and distinguish objects through a microscope.
5. Speech: Ability to verbally communicate understandably in English.
6. Hearing: Ability to adapt with assistive devices (i.e., phone receivers, hearing aid, etc.)
7. Writing: Ability to communicate effectively in the written form in English.
8. Reading: Ability to read, understand and follow directions printed in English.
9. Psychological Stability: Ability to demonstrate the emotional health required for full utilization of the applicant's intellectual abilities. Must be able to recognize emergency situations and take the appropriate actions.

Students entering the Sentara RMH School of Histotechnology must be able to sign the following statement:

I _____ (Name) attest that I have read and understand the essential functions of the Sentara RMH School of Histotechnology and I believe that I can, and am prepared to, meet these requirements.

Signature Date

Sentara RMH School of Histotechnology

Harrisonburg, Virginia

Honor Code & Policy for Completion of Program

(Revised 6/2/2020)

I understand that if I cheat on an exam, practical or any type of evaluation instrument, that I will be dismissed from the school. I have read the causes for dismissal from the program, and agree to abide by the Sentara RMH Rules and I agree to abide by the honor code of the Sentara RMH School of Histotechnology, and regulations while I am a student in the school.

I have read the information for progression through the program found in the Curriculum Guide. I understand the necessary requirements for progression in and completion of the program.

By signing this document I attest to the above stipulations.

_____ _____

Student Signature Date

Sentara RMH School of Histotechnology

Harrisonburg, Virginia

Health and Safety Policy Signature Sheet

(Revised 6/2/2020)

I acknowledge that I have received instructions on health and safety during my hospital orientation class and Sentara RMH School of Histotechnology Orientation course.

I understand this material and agree to adhere to the health and safety policies to include biohazard and safety training. Additional safety training will be in the School of Histotechnology Student Lab and during clinical rotation.

_____ _____

Student Signature Date

Sentara RMH School of Histotechnology

Confirmation of Knowledge of Rules and Regulations

(Revised 6/2/2020)

As a student of the Sentara RMH School of Histotechnology, I agree to abide by the code of ethics and the general rules and policies of the school and the hospital, and I am responsible for my conduct at all times. In signing below, I also affirm that to the best of my knowledge, the application information is correct and accurate.

Signature Date

Consent for Photography/Videotaping/Interview

(For Media, Public Relations, Marketing, and Educational Purposes)

Date: _____

❑ SENTARA EMPLOYEE ❑ PHYSICIAN
❑ AGENCY/COMPANY ❑ OTHER: _____
❑ FAMILY MEMBER

Name (Print): _____

Street Address: _____ **City:** _____

State: _____ **Zip:** _____ **Phone:** _____

E-Mail: _____

I consent to interviews, photographs, or videotapes of me or my family member(s), that may disclose personal health information, for use, reproduction, and/or publication by Sentara Healthcare and its affiliates ("Sentara"), and authorize release by Sentara to other organizations or news outlets, including local, regional, national, and international print, broadcast, and internet media.

I understand and agree that these images and interviews, including my image, likeness, and/or voice, may be used in the news or by Sentara for purposes of education, promotion, public relations, and/or marketing, and that they may appear in print, on television, in radio broadcasts, or on the internet. I understand that there is a possibility that I may be identifiable in these photographs, videos, or written/audio accounts, though my name will not be published unless I specifically agree below.

❑ I DO ❑ I DO NOT Consent to the use of my name (or the patient's) with these photographs or videos.

I agree to release and hold harmless Sentara, its trustees, agents, officers, and employees from any and all liability which may arise from the making of or use of these photographs, videotapes, or interviews, and I will not request payment for the use of my image or likeness.

I understand that signing this authorization is strictly voluntary and that I may revoke it at any time. However, I acknowledge that any interviews or images to which I consented prior to revocation may already be in the public realm and not retrievable. I also understand that any personal health information released by me under this consent will no longer be protected by federal privacy regulations.

_____ _____

SIGNATURE (OR SIGNATURE OF GUARDIAN IF A MINOR UNDER 18 YEARS OLD) DATE

Person responsible for photo shoot / videotaping / interview session: (PLEASE PRINT)

_____ _____ _____

NAME TITLE ORGANIZATION

NOTES:

_____

_____

_____

SENTARA™

Statement of Responsibility & Confidentiality

All employees of Sentara Healthcare and any individuals who have access to Sentara Healthcare information, files, data or computer applications must sign and follow this statement of responsibility and confidentiality.

1. I understand and agree that any information I learn during my employment and/or affiliation with Sentara Healthcare regarding patients/families, physicians/dentists/limited health practitioners is confidential. I agree not to use, view, discuss, disclose, duplicate, alter or destroy such information **unless my job requires it**. Further, I will not give such information to anyone who does not have authorized access to it, attempt to learn confidential information not required by my job or discuss such information when participating in social media or other internet sites (i.e. posting of information, photographs, etc).

2. I understand this statement also covers all passwords issued to or used by me to operate Sentara Healthcare computer systems. Therefore, I agree not tell my passwords to anyone for any reason, not to permit another person to use them, not to use another person's, and not to sign on to any system to allow an unauthorized person to use the system. Further, since my passwords are the equivalent of my legal signature, I agree immediately to change or have changed passwords that have become known to other people.

3. I understand and agree to follow all SHC security policies and procedures of specific computer systems to which I am given access. I also understand if I have not used my access to a certain system within 90 days, my access to it may be suspended, and if I have not used it in 90 days, my access may be deleted.

4. I understand that I am responsible for logging off a system session if I leave the vicinity for the system workstation. I further understand that if I fail to log off the system session, I will personally be held responsible for any activity performed on the system after I left the workstation vicinity.

5. I understand and agree that I am responsible for Sentara Healthcare resources, material, and data in my possession. I will take precautions to protect them from theft, temperature changes, water damage, and other intentional damage; I understand that if I do not take reasonable precautions, I may be held liable for any damage incurred.

6. Although incidental and occasional personal use of Sentara hardware, software, and data is permitted, I understand that excessive personal use or inappropriate use of any Sentara resources, material, and data may result in disciplinary action up to and including termination and also agree not to allow another person to use them for personal use while they are in my possession. I acknowledge that I represent the company when using Sentara hardware, software, and data and will not participate in any activities that are unlawful nor will I release protected health information, Sentara trade secrets and other confidential business material of Sentara gained as a result of my position. I understand that any actions I take in the computer based information systems are tagged with my unique identifier as established in my user profile and such actions can be traced back to me.

7. I agree to respect copyright laws and not to make unauthorized copies of copyrighted material, and I understand that I will be held personally liable for any unauthorized copies of copyrighted material made by me.

8. I understand all patient medical information is confidential and agree to treat it as such. I further agree that I will use and disclose such information only in accordance with state and federal laws, including, but not limited to, the regulations promulgated under the Health Insurance Portability and Accountability Act of 1996.

9. Even if not technically enforceable, and to the extent possible, I will ensure that my passwords comply with the password Management Policy to the extent that a particular password is capable of compliance. For example, if the system can only accept a 6 character password, 6 characters will be sufficient.

I have read and understand the above and acknowledge that it is my responsibility to adhere to this Statement of Responsibility & Confidentiality at all times. I agree that any violation of this understanding and agreement will result in my losing access to computer systems and is grounds for corrective action that may result in dismissal. Sentara Healthcare will retain the original signed copy of this Statement of Responsibility and Confidentiality. I understand that this document does not alter my relationship with Sentara as an at-will employee.

User Name _____ Date_____

Revised 11-1-2010 – Revised Bullet 1 with language specific to social media; Revised 9-23-2013 – Added Bullet 9 for technical enforcement; Revised 1/29/15 – part 1.; Revised 6-1-16 #6 and #7 NLRB Edits; 7/19/2017 – annual review

(Please print your first, middle, and last name) _____

User Signature_____Employee ID _____

I understand that if the user named above changes job function, transfers to another department, requires leave of absence, or terminates employment, affiliation, or association, I must notify Security Administration immediately.

File in Personnel File

Revised 11-1-2010 – Revised Bullet 1 with language specific to social media; Revised 9-23-2013 – Added Bullet 9 for technical enforcement; Revised 1/29/15 – part 1.; Revised 6-1-16 #6 and #7 NLRB Edits; 7/19/2017 – annual review

Sentara

Job Aid:	IP&C Hand Hygiene Competency Tool		
Manual:	Infection Prevention & Control	**Original Date:**	11/21/2023
Section:	Aseptic Techniques	**Revision Date:**	
Location(s):	SAMC, SCH, SHRH, SLH, SMJH, SNGH, SNVMC, SOH, SPAH, SRMH, SVBGH, SWRMC, SASD	**Approved By:**	IPPF, EOHS
		Process Owner:	Infection Prevention & Control

Revision Description (Most Recent):

Employee: _____ Date: _____

To be completed upon hire during orientation or as needed for refresher training.

Purpose:
To provide Employee Occupational Health with guidelines to assess hand hygiene competency among staff and others as necessary.

Definitions:
EOHS – Employee Occupational Health Services
IPPF – Infection Prevention Practice Forum

Sentara Hand Hygiene Competency Tool

World Health Organization (WHO) "5 Moments for Hand Hygiene": Before and after direct contact with a patient's intact skin, before performing a clean/aseptic procedure, after contact with patient equipment or the patient's environment, after body fluid exposure **risk** (i.e., emptying foley bag or bedpan).

Hand Hygiene Opportunities: Sentara prioritizes use of alcohol-based hand sanitizer for most hand hygiene opportunities. Use of soap and water is required before eating, after using the restroom, and when exiting a Contact Enteric Precautions patient room.

Use only Sentara-approved soap, alcohol-based hand sanitizer, and lotion.

Peer Checking/Peer Coaching: Provide positive feedback when hand hygiene is done correctly and always remind others (if they are about to have a lapse) and /or coach HH noncompliance – *All Hands on Deck!*

Hand Hygiene Using Soap & Water	Competent	
	Yes	No
Preparation: Ensure sinks are supplied with soap, paper towels, and a trash can. Use warm water.		
Apply enough soap for both hands, between fingers, up to wrists to about where gloves end. Must use hospital-approved soap.		
Scrub time must be **≥20 seconds** using friction.		
Wash all hand surfaces: The "5" Maneuvers a. Rub palms of hands, backs of hands, then palms again with interlocking fingers. b. Cup hands & fingers and rotate (to get the tops of fingernails and tips of fingers). c. Rub using rotation around thumbs. d. Rub fingertips to palms (to get the underside of fingernails and tips of fingers). e. Rub using rotation around wrists.		

Rinse thoroughly under running water with fingertips pointed down.		
Dry hands thoroughly with clean paper towels.		
Use paper towel to turn off faucet to prevent contamination of clean hands.		
Hand Hygiene with Alcohol-Based Hand Sanitizer		
Apply enough hand sanitizer to cover all surfaces of hands and wrists for the entire process (hands should not be dry in 10 seconds).		
Dispense appropriate amount of hand sanitizer. Rub hand sanitizer vigorously over both hands up to ½ inch above wrists.		
General Observations – Nail Hygiene		
For all nails, regardless of clinical or non-clinical facility: ▪ Nails and nail bed must appear clean. ▪ Nails must not be chipped or ragged. **For clinical and patient-facing facilities:** ▪ Length no longer than ¼ inch. ▪ Nail polish must be easily wiped off/removed with nail polish remover. Nail products requiring a soak in nail polish remover are not permitted. ▪ Note that some areas, e.g., Surgical Services, may have more restrictive nail policies.		
Skin should be intact without open wounds, rashes, etc.		

Signature of observer:_____

Related Documents:

Policy	IP&C All Hands on Deck
Procedure	IP&C Hand and Fingernail Hygiene
Job Aids	IP&C Isolation Categories Chart
Regulatory References	Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Setting 2007 Guidelines for Hand Hygiene in Healthcare Settings, 2002 Department of Health Food Safety Regulations 2002 CDC Hand Hygiene in Healthcare Settings: Hand Hygiene Guidance, 2020 World Health Organization Hand Hygiene Guidance SHEA IDSA HH Practice Recommendations WHO 5 Moments for Hand Hygiene

Online Orientation Training

(Revised 6/2/2020)

Complete all modules which have been assigned on Sentara Workday by 6/21/24

SENTARA®

Sentara Healthcare Department Orientation Checklist

This form should be completed within 30-days of someone starting in your department.

Employee/Non-Employee Name (Print) Title Department Date

	Date	Initials of Orientee	Initials of Preceptor
Sentara Mission Statement – "We improve health every day"			
Introductions to staff/manager			
Tour of unit/facility, a Tobacco-Free campus			
Location of restrooms, break room, equipment, supplies, etc.			
Emergency codes review and number to call for emergencies (12)			
Location of fire extinguishers, pull boxes, fire plan, routes, RACE/PASS			
Hazardous Materials Safety Data Sheets access			
Infection Prevention and Control - personal protective equipment and where to locate, isolation precautions, handling exposures, eye wash station and procedure, *physically demonstrate proper hand hygiene (5 maneuvers)			
Video Remote Interpreter			
Dress code, badge requirements, specific unit/dept. policies			
HIPAA and privacy requirements			
Other: (Please list)			

Employee/Non-Employee Signature _____ Date: _____

Manager Signature: _____ Date: _____

Do not draw lines down page; each box needs to be filled in with date/initials.

Sign and retain a completed copy in the education folder. Additional department orientation material may be added as required.

Rev: 5/11/2022

*SWRMC Revision: Added Demonstrate proper hand hygiene (5 maneuvers)

School of Histotechnology

Harrisonburg, Virginia

Safety Policies

(Revised 6/2/2020)

Student Safety

All students must follow the safety policies of the hospital and school. Student safety is of the utmost concern for the hospital and school, and precautions to protect that safety will be maintained. Safety policies required by CAP and DNV and other accrediting agencies will be followed by the hospital and school.

Laboratory Accidents

All laboratory accidents are to be reported immediately to one of the following:
Program Director
Laboratory Administrative Director
One of the laboratory managers
A **STARS Report** will be completed and filed, and any necessary medical attention promptly given. It is imperative that ***all*** accidents, no matter how minor, be reported.

Students in the Histotechnology program are responsible for observing and following all hospital policies. The student is encouraged to review the laboratory policy manual upon entrance into the program. A copy of the manual is located in each clinical section.

Sentara RMH Laboratory Schools Fire Plan

Purpose: To delineate procedures to be followed by staff and students of Sentara RMH School of Medical Laboratory Science, Sentara RMH School of Histotechnology and School of Phlebotomy in the event of a fire until the arrival of the local fire department.

Procedure:

1. All employees will follow the procedures described by the acronym 'RACE' as outlined in the hospital procedure manual.

    R **Remove/rescue** all students or visitors who are in immediate danger
    A **Activate** the nearest fire alarm by calling 911
    C **Confine** the fire by closing all doors/windows
    E **Extinguish** the fire until the arrival of the Fire Department

2. There are three fire pulls in the building, located at each of the three exits. In case of fire, proceed to closest exit to activate the alarm. Emergency lighting is located at each exit.

3. There are smoke detectors located throughout the building; employees should observe where they are located in their work areas.

4. There are **7 fire extinguishers** located in the building:
    A. At both ends of the front hallway (2)
    B. At both ends of the back hallway (2)
    C. Breakroom
    D. MLS student laboratory
    E. HTL student laboratory

5. There are **3 exits** located in the building:
    A. Front door of the building
    B. At both ends of the back hall

General Fire Plan

1. **Inform:** The urgency and degree of the evacuation is a judgmental matter, depending on the situation. Some fires may require partial or total evacuation.

    A. Decision to evacuate the department shall be made by the Program Director

2. **Report:** The fire is reported by following the steps outlined below:
    A. Call in a loud voice, "Attention…a fire has been located in the building. Please remain calm and report to the nearest exit."
    B. Call 911

3. **Contain:** To prevent the spread of fire and smoke, close all windows and doors but do not lock them. A confined fire will gain less headway and spread less smoke to other areas.

4. **Fight fire:** After making sure everyone in the building is safe, and reporting fire, immediately start to extinguish or control fire. Follow the procedures delineated by the acronym PASS as outlined in the hospital procedure manual:

    P Pull
    A Aim
    S Squeeze
    S Sweep

5. **Evacuation:** If it is not safe to attempt to extinguish the fire, the area should be evacuated. Muster point for the building is the bus stop on Technology Drive.

Staff Responsibilities:

A. Ascertain the location of the fire
B. Implement fire plan
C. Communicate with staff and students
D. Evacuate students to nearest exit
E. Inform arriving fire department
F. Notify supervisor

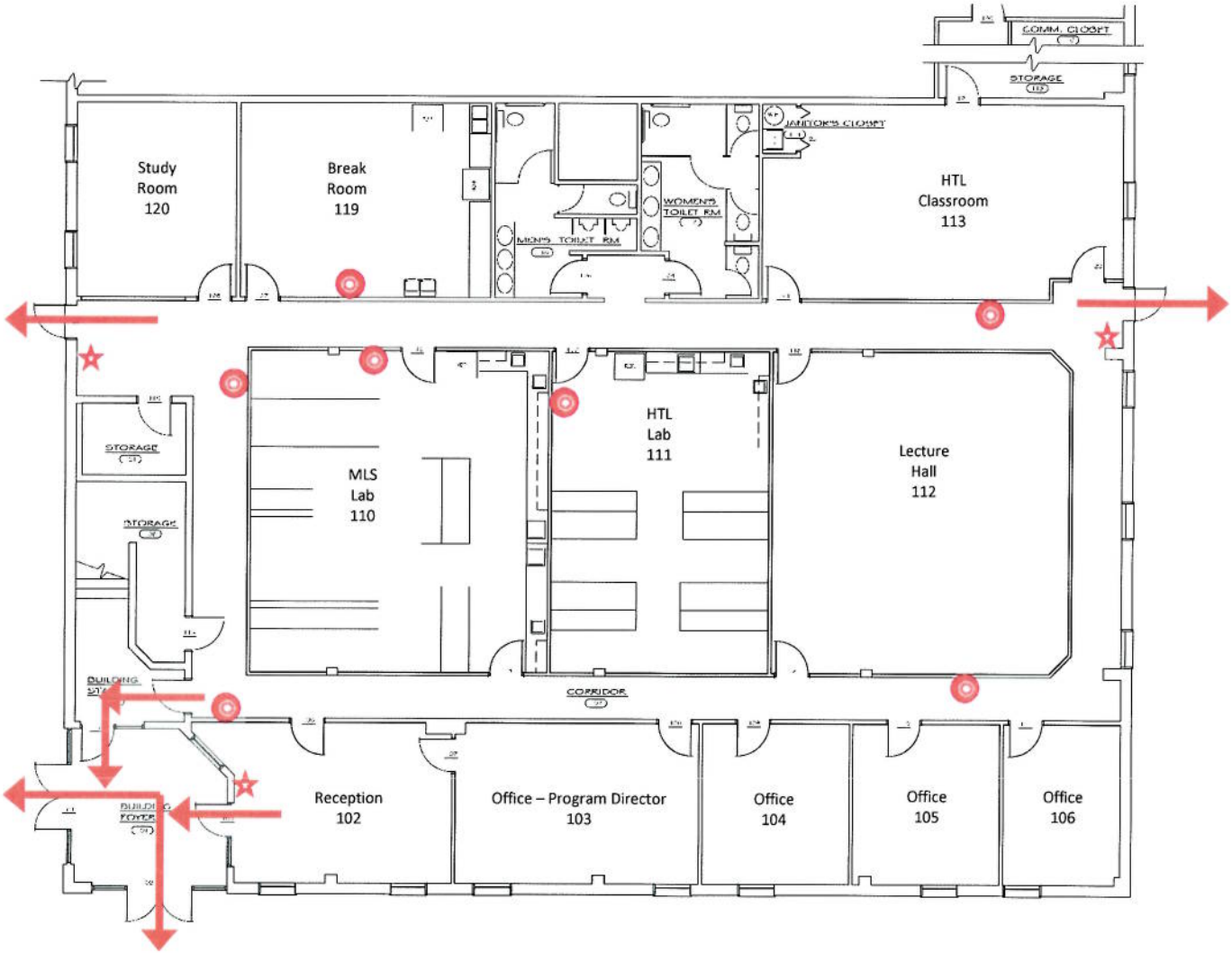
Training:

A. New personnel orientation will include a review of the departmental plan.
B. Each new class of students will be educated on the departmental plan, their roles, their evacuation routes, and the principals of RACE and PASS.
C. Employees will be inserviced annually on the departmental plan, their roles, their evacuation routes, and the principals of RACE and PASS.

FIRE PLAN

Sentara RMH Medical Center School of Histotechnology (HTL) and School of Medical Laboratory Science (MLS)
Building Located at 1401 Technology Drive

= Fire Extinguisher =Fire Pull Station



Muster point for the building is the bus stop on Technology Drive.

Sentara RMH School of Histotechnology

Harrisonburg, Virginia

Snow Policy

(Revised 6/2/2020)

The Sentara RMH School of Histotechnology will follow the cancellations of classes because of snow and ice or hazardous driving conditions the same as James Madison University of Harrisonburg, Virginia. When you hear the announcement of closing James Madison University classes, you will know that Sentara RMH School of Histotechnology is also closed. This only applies to closing due to bad weather and does not apply to any other situation. Announcements are given on radio and television in the case of bad weather. If there is a 2 hour delay because of weather at JMU, the same will apply to Sentara RMH classes.

Students on rotation at Sentara Hospitals in the Norfolk and Williamsburg areas will follow the cancellation of classes because of snow and ice or hazardous driving conditions the same as Old Dominion University. When you hear the announcement of closing at ODU, you know that Sentara RMH School of Histotechnology is also closed. This only applies to closings due to bad weather and does not apply to any other situation. If there is a 2 hour delay because of weather at ODU, the same will apply to Sentara RMH classes.

Students on rotation at Sentara Hospitals in the Charlottesville area will follow the cancellation of classes because of snow and ice or hazardous driving conditions the same as the University of Virginia. When you hear the announcement of closing at UVA, you know that Sentara RMH School of Histotechnology is also closed. This only applies to closings due to bad weather and does not apply to any other situation. If there is a 2 hour delay because of weather at UVA, the same will apply to Sentara RMH classes.

School of Histotechnology

Harrisonburg, Virginia

General Policies

(Revised 6/2/2020)

Grievance Procedure (Academic and non-academic grievances will follow the same policy, and will be addressed in the same manner.)

Students are encouraged to maintain open lines of communication with faculty. This will promote discussion of any problem that may arise. If for any reason, the student feels that they have been treated unfairly, they may proceed with the grievance procedure. This grievance procedure will apply to an academic and non-academic grievance. It is as follows:

1. The student will bring the charge in writing to the program director within two weeks of the action or occurrence.

2. A response will be made by the program director within two weeks.

3. If the student is not satisfied with the ruling of the program director, they may file a written complaint to the laboratory administrative director.

4. The laboratory administrative director will make a ruling on the complaint.

5. If the student is not satisfied, the grievance committee will be convened, at the written request of the student. The panel will be made up of seven members. These will include the program director, SRMH laboratory administrative director, a student from the current class, SRMH Histology Instructor, education coordinator for HTL school at Sentara, one member from the SRMH Human Resources Department, and one member of the faculty from one of the university affiliates of the SRMH School of Histotechnology (if possible, this member will be from the college the student attended). This committee will meet within two weeks of the written request from the student. The results of the grievance committee will be the final decision. The committee will give the final report within two weeks of the meeting to the student and any other parties involved. Waivers of the above stipulations may be granted if agreed to by all parties.

The student may contact the State Council of Higher Education as a last resort.

State Council of Higher Education for Virginia (SCHEV)
Private and Out-of-State Postsecondary Education
101 N. 14th Street
Richmond, VA 2321

Tuition

The tuition for the year is $5,000.00 for all students regardless if that student pays tuition to a university. Tuition must be paid before classes begin in all cases. Tuition must be paid in full. There are no installment payments available. The school does not offer any types of financial aid. One fee for the year of $100.00 is collected when the student accepts a position in the school. The $100.00 fee is nonrefundable. Accepted students will be sent a list of required textbooks. These are purchased by the student and brought the first day of class. The school does not participate in the federal student aid program.

Health Care

Each student must have and is responsible for obtaining an adequate health insurance policy during the clinical year. Evidence of this health insurance coverage must be demonstrated upon entering the Program. Any services administered as an inpatient are the responsibility of the student.

Emergency Room services and other hospital services are available to students for charges as rendered in the same manner as employees. Students injured as a result of a laboratory or hospital accident will be taken to the hospital emergency room for any necessary treatment. The student will be responsible for any expenses that are charged by the emergency room for such a visit.

Liability Insurance

The SRMH Healthcare will cover students with liability insurance while they are in class.

Leave of Absence (Voluntary Withdrawal)

In reference to voluntary withdrawal or leave of absence, re-admission to the program is contingent upon past records and space availability. Re-admission of students dismissed for academic or disciplinary reasons would not be considered unless such dismissal was due to illness or other correctable circumstances. Students have the right to appeal.

It is recognized that interruptions may occur for various acceptable reasons, such as an accident, illness, or pregnancy. Each request for interruption of the program will be considered on an individual basis. When a subject has been completed in its entirety, including both lecture and clinical rotation, credit will not be lost by interruption of the program. Partial credit would be given if at least three months of the program had been completed. Re-entrance for such interrupted training is dependent on space availability, academic standing at the time of the interruption, and length of interruption interval. Interrupted training must be reinstated within a two-year period.

A student who does not resume attendance on the return date following a leave of absence will be terminated by the program.

Withdrawal Policy

A student may withdraw from the Program at any time. A completed transcript of grades is generated for each student at graduation. Transcripts are not generated for students who do not finish the program. The withdrawal/cancellation must be made during the three (3) day cancellation period. For 100% refund

of tuition, withdrawal must be made during the three (3) day cancellation period. Withdrawal should be submitted in writing with student signature.

Student Counseling

There is an open-door policy with the program director and the education coordinator. Students may seek advice or counseling at any time throughout the year.

One formal counseling session with the program director and the HTL instructor will be scheduled. Additional formal sessions will be held if the student is experiencing problems.

If a student has concerns/problems within the didactic phase of the Program, the student should first discuss the matter with the respective instructor. If not satisfied with the response, the student may then contact the Program Director for further discussion.

After each rotation, the student will receive an evaluation completed by the department. This is an additional opportunity for the student to receive counseling when this evaluation is discussed between the Program Director and the student.

During the clinical rotation portion of the program, the program director and education coordinator will contact the student regarding career planning. Students will be advised on how to write a resume and will be given information regarding job openings both within Sentara labs and at other healthcare facilities.

Faculty will be available 30 minutes before or after each class for academic and/or course advising to students. There are no placement services offered by the school.

Parking

Parking is available in the lot next to the building. Please leave parking along the building for faculty and guests.

Professional Dress Code

Black scrubs must be worn at all times according to the Sentara RMH Healthcare dress policy. Scrub colors for rotation at other Sentara hospitals may vary. No flip-flops or open-toed shoes may be worn. If dress is not appropriate, the student will be asked to leave and not return until appropriate dress is worn. Any infractions will be noted in the student's permanent record.

Substance Abuse Policy

SRMH Healthcare has a strong commitment to its employees and patients to provide a safe work place and to establish programs promoting high standard of employee health and wellness. The Hospital's goal will continue to be one of establishing and maintaining a work environment that is free from: (A) the effects of illegal drugs, (B) the effects of alcohol, and (C) the abuse of legal drugs and substances. The Hospital recognizes that serious involvement with drugs or alcohol eventually takes a toll on an individual, family and the organization. Students having a drug or alcohol problem are strongly encouraged to seek outside professional assistance.

Students are subject to abide by Sentara Policy.

Sentara

Policy:	Colleague Professional Appearance 109		
Manual:	Human Resources	**Original Date:**	9/1/1998
Section:	Employment	**Revision Date:**	11/21/2023
Location(s):	Sentara and its direct and indirect wholly owned and/or majority-owned subsidiaries, including Consolidated Courier Services, Corporate, PACE, SAMC, SCH, SE, SHP, SHRH, SLH, SASD, SMJH, SNGH, SNVMC, SOH, SPAH, SRMH, Supply Chain, SVBGH, SWRMC	**Approved By:**	Executive Vice President & Chief People Officer
		Process Owner:	Human Resources

Revision Description (Most Recent): Added Identification Badge and expectations to policy.

Policy Statement:

At Sentara Health, we understand and appreciate the diverse backgrounds and personal expressions of our team members. We believe that our collective appearance plays a role in fostering a positive work environment, strengthening our organizational culture, and enhancing our reputation. Together, we aim to present an image that helps build trust with those we serve. This policy not only prioritizes safety and professionalism but also seeks to uphold the dignity and respect of every team member.

General Guidelines

We trust and encourage our team members to select apparel and grooming styles that reflect professionalism and align with their roles.

1. Please ensure your attire is clean, neat, professional, and respectful.
2. Clothing shall be free of pictures, advertisements, and endorsements, except with senior leadership approval (i.e., President) who can approve Sentara logo gear, spirit week attire, holiday celebrations, etc.
3. Shoes should be appropriate for a professional work environment, clean, and in good condition.
4. For those who love accessorizing, let's ensure our jewelry choices are safe and suitable for our roles.
5. Fragrances should be used sparingly as they may irritate those who have sensitivities to fragrances.
6. We appreciate and respect personal expressions like tattoos and body art. Let's ensure they convey respect and understanding for all. A leader may ask you to cover a tattoo or body art (i.e., bandage or article of clothing) if the tattoo is potentially offensive or controversial to co-workers, patients, members, vendors, or others (i.e., violence, nudity, illegal substances, weapons, etc.).
7. ID Badges with a current official picture and in good condition shall be worn and visible for our consumers and colleagues to identify one another easily and for security purposes.
8. Attire for business units/departments or occupations that have executive leadership approval may adopt a uniform that includes khakis and polo shirts.

Expectations for Direct Patient-Care Occupations and Environments

1. A ***uniform***, designated clothing, jackets and/or scrubs as applicable for assigned occupation shall be worn and maintained by you.
    a. All uniforms and clothing shall be worn in accordance with established color guidelines, in good condition, and cleaned daily to ensure prevention of infection risks to our patients.
        i. Home laundering of clothing and departmental uniforms shall be performed according to manufacturer's recommendations and not mixed with items used for environmental cleaning/disinfection in the same load. Home laundering is not allowed for surgical/procedural area scrubs.
    b. Clothing worn prior to changing into hospital provided scrubs should be clean and professional.
2. Clothing shall be ***free of pictures, advertisements, and endorsements,*** except with senior executive approval (i.e., President) who can approve Sentara logo gear, spirit week attire, holiday celebrations, etc.

3. ***Headwear*** required for safety reasons or as part of a department uniform are appropriate.
4. ***Shoes*** shall be clean and appropriate to the uniform in the area and the type of work performed.
    a. Per OSHA regulations, open toed shoes/sandals are prohibited in any patient care/clinical areas.
    b. Footwear worn by clinical staff shall be professional/hospital/clinical grade, solid surface made of non-absorbent and non-perforated materials (i.e., no perforated CROC style clogs or shoes constructed of nylon or canvas materials.) If clogs are loose fitting, the heel strap shall be worn.
    c. Shoe covers should not be worn outside of your immediate patient work area.
    d. Department specific shoes may be required, such as designated color, slip resistant soles or shoes with hard toe for safety.
5. ***Hair*** shall be clean and not pose a safety hazard when performing assigned job duties.
        i. Facial hair may not inhibit N95 respirator for those positions requiring fit testing.
6. ***Fingernails*** shall be natural, clean, unchipped, and maintained at a length shorter than one-quarter inch past the tip of the finger. For more information, please refer to the Infection Prevention & Control Procedure #204 Handwashing/Hand Hygiene/Fingernail Hygiene.
7. ***Fragrances*** should not be used in clinical and patient care areas.
8. ***Personal Protective Equipment*** (PPE) shall be worn in accordance with the procedures/processes for your position. You are responsible for:
    a. understanding and adhering to the process of Standard Precautions.
    b. the proper use of personal protective equipment.

Expectations for Environments Where Patients or Members Are Not Seen Daily

In Sentara's divisions where we don't see patients or members daily, we embrace a ***professional casual dress code*** to nurture a respectful and polished work environment. Our intention is to foster a culture of professionalism while providing some flexibility in attire choices. We trust our employees to make clothing choices that align with our company's values and mission. We encourage our employees to embrace the following guidelines:

1. ***Attire*** should mirror professionalism, such as dress slacks, skirts, and collared shirts/blouses. While a blazer or suit jacket is an option, you are encouraged to select clothing that presents a professional image.

2. Closed-toe ***footwear*** or dress shoes are preferred. Sneakers, flip-flops, and overly casual footwear should be avoided. If you plan to visit a patient care facility, closed-toe shoes are recommended for safety reasons.

3. We celebrate ***Fridays*** as a day of relaxation and camaraderie. On Fridays, you are encouraged to embrace a more relaxed dress code, allowing well-kept jeans. Please ensure they are clean and free of holes or excessive wear.

4. For meetings, presentations, client interactions or other ***special occasions***, you are encouraged to elevate your professional casual attire, which may include wearing a blazer or more formal clothing.

6. Some departments or roles may have ***specific dress code*** recommendations. We invite you to consult with your supervisor or HR for any needed clarification.

Expectations for Remote Colleagues

Remote colleagues must be "camera-ready" during business hours. Professional casual dress appropriate to your role is expected when on video conferencing and all other general guidelines apply.

Expectations for ID Badges

Upon employment, Sentara Healthcare provides employees and contingent workers with an identification badge to be worn while at work and which must be displayed appropriately with the picture side visible to consumers and coworkers all times. All employees with onsite and hybrid work status, and contingent workers are required to obtain an ID badge the first day

they work onsite at a Sentara location. Employees with remote only worker status are required to obtain an ID badge, if they perform in consumer facing positions or if directed to by their supervisor.

The ID Badge clearly identifies the individual as a Sentara employee. This badge must be returned to the employee's manager at the time of employment separation from Sentara Healthcare. Photos on the badge must be renewed every 10 years or in any situation where there is a significant change to appearance, or the photo has been damaged and is unrecognizable. The badge is also used for recording time worked (see Recording Time Worked Policy 401 for details). This badge is also used to access secure areas and computer programs.

The identification badge bears a photo of the individual, first name and last name initial, job title and division/location. Sentara employees in Director level or above positions will be required to have their full last name displayed. The badge is only to be used by the individual to whom it was issued. Any employee who allows another to use their badge or uses another employee's ID badge will be subject to corrective action. This corrective action is defined in the Employee Conduct Procedure Policy (see Policy 301a for details) as a "Critical Infraction", under "Falsification of organizational records, or providing false or misleading information."

If the employee has lost their ID badge, or it has been damaged through other than normal usage, a replacement can be obtained by first paying a replacement fee to the nearest Sentara cashier and presenting the receipt at the nearest badge replacement location. Please contact your Security office for replacement badge information.

Upholding the Policy

Our policies are here to guide and support and ensure safety in the workplace rather than dictate. While we've provided broad guidelines, we trust in your judgment and understanding of Sentara's values. We are all stewards of Sentara's reputation, and our leaders are here to help ensure we reflect our best self and therefore have the responsibility to ensure if someone misunderstands or isn't in adherence with this policy, they clarify and take the best course of action for correction.

We're always here to understand and accommodate special needs based on medical or religious grounds. Feel free to discuss these with your supervisor, Employee Relations, or other system advisors such as Infection Prevention and Control and/or Employee Health.

Based on the diversity of our business needs, senior leaders and human resources in collaboration may publish additional dress code expectations.

Monitoring

Outcomes Monitoring – Departmental Directors/leaders shall be responsible for monitoring and ensuring adherence and enforcement of the stated Dress Code requirements.

Document Management – Human Resources shall be responsible for developing, communicating, and maintaining this policy and related procedures and job aids necessary for the implementation and continuance of the policy. This policy shall be reviewed at least every 3 years for repeal or amendment as appropriate.

Related Documents

Policy	Handwashing/ Hand Hygiene/Fingernail Hygiene 204 Employee Conduct Procedure Policy 301a Recording Time Worked Policy 401
Procedure	Surgical Attire in the Surgical Area Infection Prevention & Control Procedure
Job Aids	List Related Job Aids.
Regulatory References	DNV Managing Infection Risks Standards

SENTARA

Policy: 303a – Substance Abuse Testing

Division: Sentara Healthcare

Manual: Human Resources

Section: Employee Relations

Location(s) Consolidated Courier Services, Corporate, Optima, PACE, SAMC, SCH, SE, SHRH,SLH, SASD,SMJH, SNGH, SNVMC, SOH, SPAH, SRMH, Supply Chain, SVBGH, SWRMC, Virginia Premier

Original Date: 9/1/2013

Revision Date: 4/20/2021

Approved By: SVP & CHRO

Process Owner: Human Resources

Revision Date	Revision Description (Most Recent)
4/20/2021	Verbiage update per legal guidance.

Substance Abuse Testing Program

Applicants and Students:

Drug/alcohol screenings of all applicants to whom an employment offer or an offer of enrollment to the Sentara College of Health Professions has been made will be conducted before the applicant's hiring or student's enrollment is final. Students who are assigned to Sentara facilities for clinical training will be subject to their school's pre-enrollment drug screening policies.

If an individual refuses or is ruled out for employment due to unacceptable positive results, he/she may not reapply for a period of 12 months from the date of the test.

Testing for "Reasonable Suspicion":

Drug/alcohol screenings will be conducted in accordance with Sentara's Drug Free Workplace policy if your actions give rise to "reasonable suspicion" of being under the influence of a drug or alcohol or of being a user of an illegal or controlled substance. Some examples of "reasonable suspicion" for testing include, but are not limited to:

- Observation of inappropriate behavior (i.e., slurred speech, poor coordination, irrational behavior, hyperactivity, etc.) or performance and/or other problems on the job that may be caused by substance abuse.
- Credible information of illegal drug activity from a reliable source.
- On-the-job accident or serious incident resulting in property damage or personal injury or where the supervisor has reason to question your physical, mental, and/or emotional condition.
- Instances where you are suspected to be associated with missing controlled substances, or where illegal drugs are found in your possession or in or on your personal property brought onto Sentara premises or otherwise while at work. Testing may include groups of employees as determined by the circumstances.

Sentara reserves the right to remove any non-employee (i.e. contractor) who is suspected of being under the influence of a drug or alcohol from their duties. The testing procedure will be determined by the non-employee's employer or contract terms.

SENTARA

Positions Subject to DOT Regulations

The following screenings may be required if you hold a position that requires the operation of vehicles covered by the Department of Transportation (DOT):

- pre-employment;
- random screening;
- periodic testing; and
- post-accident testing

Substance Abuse Testing Procedures

- You will report at a designated time and place for testing. Appropriate collection and chain of custody procedures will be followed to protect the integrity and accuracy of the test and to respect your dignity.
- You will be subject to termination if you refuse or fail to report for testing within three (3) hours of notification.
- Positive test results will be referred to a Medical Review Officer (MRO). The MRO will communicate the results, as well as any attempt to tamper with a specimen, to the appropriate Human Resources Representative. You are not permitted to return to work until authorized by your manager/supervisor and/or the appropriate Human Resources Representative.

Required Reporting

Your manager or designated leader will report to the applicable licensure board, governing authority, and/or governing entity any information that SHC may be obligated and/or required to report.

Legal Drugs

You must report any legally prescribed drugs that you take while at work, which may influence your work performance, to Employee Health. Please discuss with your healthcare provider if a prescribed drug could affect your work performance and obtain a medical release, if necessary, prior to returning to work.

Monitoring:

Outcomes Monitoring – Managers, Recruitment and Human Resources shall be responsible for monitoring and ensuring adherence to this policy.

Document Management – Employee Relations Center of Expertise shall be responsible for developing, communicating and maintaining this policy and related procedures and job aids necessary for the implementation and continuance of the policy. This policy shall be reviewed at least every 3 years for repeal or amendment as appropriate.

Related Documents:

Procedures	Policy 303 – Drug Free Workplace and Substance Abuse
	Drug/Alcohol Screening Protocol – HR Hosp., Optima, SE, SLC, SMG, Corp (HR Job Aid)
	Drug/Alcohol Screening Protocol – SNVMC, SRMH, SMJH, SAMC, SHRH (HR Job Aid)
	Drug/Alcohol – Employer Medical Request Form (HR Job Aid)
	Drug/Alcohol – Observed Behavior Reasonable Suspicion Record (HR Job Aid)
Regulatory References	

Sentara RMH School of Histotechnology

General Rules for Classrooms

(Revised 6/2/2020)

1. Behavior should be professional at all times this includes; showing respect to fellow students and instructors with seating posture and body language during class and between classes. Use of profanity is not acceptable.

2. No food in the classroom or student lab. Drinks are permitted in the lecture room only, not in the lab. Please be careful not to spill drinks on the floor, all drinks must be in a container with a lid.

3. Do not move or rearrange tables and chairs.

4. School library books are for use in classrooms only. Please ask the Program Director if you wish to sign out a book.

5. You may have your cell phones in the classroom but should be set to silent during lecture.

6. No cell phones or any electronic devices permitted in the student lab without permission of instructor. For exam purposes you will need to leave your phone or any electronic devices out of the classroom.

7. Only non-programmable calculators may be brought to the test room.

8. Students are not allowed in the faculty offices unless the faculty instructor is present.

9. No sleeping in the school during class or between classes. Students found sleeping will be asked to return home until properly rested before returning to class. No lying on the floor of the classroom or student lab at any time

10. Noise should be kept to a minimum because we share the building with other classes and offices.

11. During exams no personal belongings will be permitted in the classroom other than your pencil and calculator.

12. All valuable items should be placed in your school locker or vehicle, the school will not be responsible for anything lost or stolen.

Sentara RMH School of Histotechnology

Harrisonburg, VA.

CAUSES FOR DISMISSAL

(Revised 6/2/2020)

1. Failure to maintain a grade point average of 70% in any course or clinical rotation
2. Failure of three consecutive lecture tests in one subject or five quizzes in one subject.
3. One unsatisfactory clinical rotation test, evaluation, or practical.
4. Cheating on any type of evaluation (tests, practical exams, or oral exams etc.)
5. Failure to pass the Comprehensive Exam with a 70%.
6. Failure to follow the rules and instructions of the Student Lab resulting in a failing grade of less than 70% on two or more student labs.
7. Falsification of application materials.
8. Excessive absenteeism and tardiness as addressed in the Sentara RMH School attendance policy.
9. Gross neglect of duty, insubordination, dishonesty or misappropriation of hospital property.
10. Incompetence, falsification of records, disorderly conduct, soliciting for tips.
11. Willful destruction of hospital property.
12. Habits or state of health dangerous to the student, to other students, employees or to patients.
13. Alcohol and/or drug abuse-includes drinking or being drunk on the job.
14. Gambling on hospital premises.
15. Harassment of staff, fellow students or patients.

16. Failure to follow the rules and regulations of Sentara RMH and the school to include the Professional Dress Code.

17. A violation of 2 or more Sentara Red Rules as listed; for example, misidentification of patients or reporting inaccurate results on a didactic or rotation practical exam.

Dismissal from the program for academic reasons will be the last resort. Students will be placed on academic probation and may be offered the chance to repeat the program prior to being dismissed.

All non-academic violations will be brought by the Program Director to the Advisory Committee for review prior to student dismissal.

Students wanting information about their status should contact the school in writing with signature. The school will respond to the student in writing within two weeks of the request for information. Communication regarding dismissal should be in writing between the student and the school.

School of Histotechnology

Harrisonburg, Virginia

Academic Policies

(Revised 6/2/2020)

Policies on Grading and Academics

The grading system will consist of the following:

90-100 A
80-89 B
70-79 C
Below 70 = unacceptable grade

A minimum of 70% must be maintained in all courses. Below 70% is unacceptable performance.

All tests must be taken on the assigned day or a failing grade is recorded. Exceptions may be made in emergency situations.

If a student fails (below 70%) on two didactic tests, he/she may be put on probation. If a third didactic test is below 70%, the student may be dismissed from the program. Three or more quizzes below 70% may result in the placement of the student on probation. Once on probation, the failure of two additional quizzes may result in dismissal of the student. All probation status will remain in effect for the entire duration of the course, upon successful completion of the course probation may be lifted.

The progress of each student will be communicated to them by posting grades weekly on SharePoint.

Honor Code Violations

The Program has a zero tolerance for cheating. If a student is found to be breaking the honor code they will be dismissed from the program. If faculty suspect that a student is cheating, the incident will be reported to the Program Director who will convene a meeting of the Advisory Committee. At this meeting the Program Director will give a report of the incident and the committee will help determine an appropriate disciplinary response. The student may be asked to provide a written statement prior to the meeting.

Certificate of Completion

The Program awards a certificate upon successful completion of all course requirements. ***The granting of the certificate is not contingent upon the student's passing any type of external certification or licensing examination***. In addition, an official grade transcript is provided to the student. For 3+1 students, grade transcripts will be forwarded to their university or college. It is recommended that students receive a total of 30+ semester credit hours for their year of attendance by their respective university. Each credit hour correlates approximately to 8 clock hours for lecture. Each credit hour correlates approximately to 32.5 clock hours for the practicum portion.

Transcripts of grades include the following:

Course	*Grade*	*Suggested Credits*
HTL 511 Orientation		**1**
HTL 502 Fixation and Microanatomy		**2**
HTL 503 Processing/Embedding		**2**
HTL 504 Microtomy		**2**
HTL 505 Staining and Immunohistochemistry		**6**
HT 408 Clinical Laboratory supervision and Management		**1**
HT 409 Education and Research		**1**
HTL Fixation Practicum		**1**
HTL 508 Processing/Embedding Practicum		**3**
HTL 509 Microtomy Practicum		**6**
HTL 510 Staining Practicum		**5**

SRMH School of Histotechnology

Admissions Policy

(8/11/2020)

Applicants must complete the following from an accredited institution of higher learning:

- Students must have either a bachelor's degree from a regionally accredited college/university or be guaranteed one upon the completion of the clinical year.
- 30 semester hour credits in chemistry and biology (a minimum of 12 semester credit hours in each of chemistry and biology)
- One college level mathematics class
- A minimum grade point average of 2.5 on a 4.0 scale
- Submit an official college/university transcript. All prerequisite course work must be completed prior to admission to the program.
- Applicants who have met the minimum academic requirements more than seven years prior to application will be required to update by taking one course in chemistry and one course in biology

Admission criteria include a personal interview, analysis of college transcripts, review of three letters of recommendation and evaluation of personal written statement. In addition, essential functions are required for admission. Applicants will be notified of acceptance by letter.

Degrees from colleges/universities outside of the United States and Canada must be evaluated by a foreign transcript evaluation agency acceptable to ASCP. Please visit the ASCP website for the most recent list of acceptable evaluation agencies for foreign transcripts.

The student baccalaureate degree must be from a regionally accredited United States college/university or an accredited Canadian university accredited by an association acceptable to ASCP. Regionally accredited colleges or universities are accredited by one of the following associations acceptable to ASCP:

- MSA – Middle States Association of Colleges and Schools
- NWCCU – Northwest Commission on Colleges and Universities
- NCA-HLC – North Central Association of Colleges and Schools
- NEASC-CIHE – New England Association of Schools and Colleges, Inc.
- SACS/CC – Southern Association of Colleges and Schools/Commission on Colleges
- WASC-ACCJR – Western Association of Schools and Colleges

NOTE: We will prepare you for the lab portion of the ASCP exam or any certification exam. We cannot change the non-lab (experience and/or undergraduate accreditation) requirement for any certification exam. We cannot guarantee that you will be able to sit for any exam.

Students are admitted twice a year for classes beginning in January and June.

Academic Affiliations

The Sentara RMH School of Histotechnology is affiliated with:

- George Mason University, Fairfax, VA
- Shippensburg University, Shippensburg, PA
- Eastern Mennonite University, Harrisonburg, VA
- Mary Baldwin University, Staunton, VA
- Radford University, Christiansburg, VA

Sentara RMH School of Histotechnology

(Revised 8/11/2020)

Transfer Credit

The school does not give credit for work completed at other institutions. Credits earned at the school are transferable to another institution at the sole discretion of the accepting institution.

Sentara RMH School of Histotechnology

Refund Policy

(Revised 6/2/2020)

If a student withdraws from the program, a refund may be requested. Notice of withdrawal should be submitted in writing to the Program Director of the School of Histotechnology. (This refund policy applies to the $100 deposit and $5,000 tuition).

The refund policy is as follows:

A. A student who enters the school but withdraws or is terminated during the first quartile (25%) of the program shall be entitled to a minimum refund amounting to 75% of the cost of the program.
B. A student who withdraws or is terminated during the second quartile (more than 25%, but less than 50%) of the program shall be entitled to a minimum refund amounting to 50% of the cost of the program
C. A student who withdraws or is terminated during the third quartile (more than 50%, but less than 75%) of the program shall be entitled to a minimum refund amounting to 25% of the cost of the program.
D. A student who withdraws after completing more than three quartiles (75%) of the program shall not be entitled to a refund.

A student applicant may cancel by written notice, their enrollment at any time prior to the first class day of the session for which application was made. When cancellation is requested under these circumstances, the school will refund all tuition paid by student, less a maximum tuition fee of $100.00. A student applicant will be considered a student the first day of class.

Sentara RMH School of Histotechnology

Harrisonburg, Virginia

Attendance & Late Policy

(Revised 11/4/2020)

Attendance:

Academic success begins with good attendance. Students are expected to be present for all scheduled classes and clinical rotation days. All unexpected absences must be reported to the school (540-564-7232) prior to the start of the day's classes. Failure to notify the school of an absence will result in the absence being considered unexcused.

Personal days are not generally considered excused absences. If a student needs time off for a wedding, funeral or job interview they should request approval from the Program Director prior to the absence.

Sick days: Students who are ill should not attend classes to avoid spreading the illness to faculty and classmates. If a student misses three days in a row due to illness, a doctor's written excuse is required to return to classes and for the absences to be considered excused.

Unexcused absences will be subject to the following disciplinary action:

1 Unexcused absence – counseling session with Program Director and Education Coordinator

2 Unexcused absences- probation

3 Unexcused absences may result in the student being dismissed from the program. A student dismissed because of unsatisfactory attendance will not be readmitted to the program.

In addition, for each unexcused absence, 5 percentage points will be subtracted from the student's professionalism grade which is included in the Orientation course.

If more than five days are missed during the clinical rotation, the student may be required to make up missed time.

Students will be considered withdrawn from the program after missing 14 calendar days in a row (including weekends & holidays) after the student's last date of attendance.

Make-up work due to absences during the didactic portion of the program: it is the student's responsibility to obtain lecture notes from another student.

Late to Class:

Late is defined as being one minute past the time that the class or clinical rotation begins. For example, if a rotation is scheduled to begin at 8:00 AM, 8:01 is defined as late.

Five or more days late per didactic portion or rotation will be considered tardiness and may be reason to put a student on probation. Seven or more days late per didactic portion or rotation is unacceptable, and may be cause for dismissal. If you will be 5 minutes late, you must call the school. Extenuating circumstances such as emergencies or car trouble will be evaluated on a case-by-case basis.

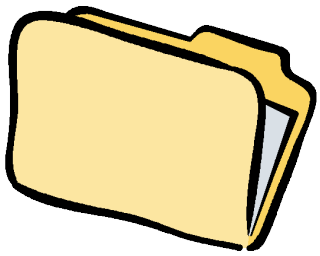
For exams, you must be in your seat and ready to start prior to the scheduled start time for each exam. If you are one minute past start time for a test, you will be deducted 10 percentage points from the exam and will not be granted extra time to complete the exam.

Plan to be in your seat and ready five minutes before the test begins.

Sentara RMH School of Histotechnology

Student Records

(Revised 6/2/2020)



All student records will be maintained permanently.

Student confidentiality is maintained by locked offices, files, and filing cabinets. A student may obtain his/her student records and/or financial records by written request with signature. Records of grades and/or financial history will not be released to anyone without written request from student with signature.

Sentara RMH School of Histotechnology

STUDENT EMPLOYMENT AND SERVICE WORK POLICY

(Revised 6/2/2020)

Understanding that employment during the clinical year is sometimes a necessity, such employment is left up to the discretion of the individual student. When considering this option, the student should remember that the clinical program is a minimum of 40 hours each week, not including preparation and study time outside of the clinical setting. While outside employment is a student decision, the Program Director may counsel the student should academic work begin to decline.

Following completion of the first clinical rotation, students may be eligible to apply to work weekends, evenings or holidays according to hospital employment policies, based on position availability. This employment is an option to the student, and compensation will be monetary. When students work for pay, they are responsible to the hospital, as any other employee, and this work has no connection to the requirements of the student by the School of Histotechnology. Again, work is contingent upon position availability within the laboratory, and will be handled by the School of Histotechnology as any other form of employment would be handled.

Service work by students in clinical settings outside of academic hours must be noncompulsory.

Students may not be substituted for regular staff during their student experiences.

Sentara RMH School of Histotechnology

COMPETENCY STATEMENTS*

(Revised 6/2/2020)

The following competencies are for all the areas of the histology laboratory. Measurement of all competencies is the minimum of 70% on all evaluation mechanisms to include written tests, laboratory practicals, oral exams, student lab worksheets and rotation evaluations.

The Sentara RMH School of Histotechnology graduate with regard to laboratory operations and the performance of basic and special laboratory procedures involving Fixation, Processing/Embedding, Microtomy and Staining at career entry, the Histotechnologist:

DEFINES OR IDENTIFIES PRINCIPLES OF

1. Methods
2. Terminology
3. Reactions and results
4. Sources of error
5. Anatomy, histology, physiology, biochemistry and pathology
6. Standard operation procedures of methods and instrumentation
7. Management and education

SELECTS OR PREPARES APPROPRIATE

8. Methods
9. Procedural courses of action
10. Reagents
11. Instruments
12. Controls

CALCULATES RESULTS

13. Calculates results

CORRELATES REACTIONS OR RESULTS OF BASIC AND SPECIAL METHODS WITH

14. Anatomy
15. Histology
16. Physiology
17. Biochemistry or pathology to assess procedures

EVALUATES REACTIONS, RESULTS, METHODS TO

18. Assist in ascertaining disease states
19. Check for common and unusual problems

20. Take corrective action
21. Verify quality control
22. Assess validity
23. Assure laboratory safety
24. Check for potential sources of error

DEMONSTRATES BEHAVIOR APPROPRIATE FOR A PROFESSIONAL HISTOTECHNOLOGIST WITH REGARD TO

25. Ethics and integrity
26. HIPPA regulations and patients
27. Professionalism
28. Continued professional career growth, development and maintenance
29. Laboratory safety

*****Original from ASCP Histotechnologist Competencies

Sentara RMH School of Histotechnology

Students' Rights and Privileges

(Revised 6/2/2020)

1. **Counseling:** Confidential counseling assistance is available to students experiencing any personal problems. The Program staff will provide more information if requested. Confidentiality is maintained during all student-counseling sessions.

   There is an open-door policy with the program director and the histotechnology instructor. Students may seek advice or counseling at any time throughout the year.

   One formal counseling session with the program director and the histotechnology instructor will be scheduled. Additional formal sessions will be held if the student is experiencing problems.

   If a student has concerns/problems within the didactic phase of the Program, the student should first discuss the matter with the respective instructor. If not satisfied with the response, the student may then contact the Program Director for further discussion.

   After each rotation, the student will receive an evaluation completed by the department. This is an additional opportunity for the student to receive counseling when this evaluation is discussed between the Program Director and the student.

   During the clinical rotation portion of the program, the program director and education coordinator will contact the student regarding career planning. Students will be advised on how to write a resume and will be given information regarding job openings both within Sentara labs and at other healthcare facilities.

2. **Complaints:** Student complaints should be brought to the Program Director. If the complaint cannot be solved by the Program Director and the student, and it involves the entire class, then a class meeting will be held. The group will discuss the complaint and decide on a resolution that is acceptable to all concerned. Complaints will be addressed in a timely manner so that a resolution may be reached quickly with the satisfaction of everyone. Complaints will be handled within the framework of the Program and hospital policies. Respect for all involved is of utmost importance to the Program. If another department in the hospital is involved, the Program Director will contact the other department. It is felt that open communication will help to prevent any unhappiness from escalating into a complaint. Students will not be subject to unfair actions by faculty in response to complaints.

3. **Respect:** Students have the right to respect from the Program Director, all instructors and fellow students.

4. **Leave of absence:** It is recognized that interruptions may occur for various acceptable reasons, such as an accident, illness, or pregnancy. Each request for interruption of the program will be considered on an individual basis. When a subject has been completed in its entirety, including both lecture and clinical rotation, credit will not be lost by interruption of the program. Partial credit would be given if at least three months of the program had been completed. Re-entrance for such interrupted training is dependent on space availability, academic standing at the time of the interruption, and length of interruption interval. Interrupted training must be reinstated within a two-year period.

5. **Voluntary Withdrawal:** A student may withdraw from the Program at any time.

6. **Safety:** Student safety is of the utmost concern for the hospital and school, and precautions to protect that safety will be maintained. Safety policies required by CAP and DNV and other accrediting agencies will be followed by the hospital and school.

7. **Laboratory work during clinical rotation:** Students may not be substituted for regular staff during their student experiences.

8. **Library Use:** The SRMH Library will provide up to 10 free interlibrary loan photocopies for students who are enrolled in the Program. Thereafter, an $8.00 charge will be assessed per article. Students may check out books from the library.

9. **Achievement:** Students who demonstrate outstanding achievement while on rotation may advance to the next rotation (eliminate all or a portion of a rotation) by meeting the following criteria:
    a. Pass a rotation practical, evaluation and written exam with a grade of “C” or better.
    b. Meet all objectives including the cognitive, affective and psychomotor learning domains for that rotation.
    c. Must have completed prior clinical laboratory experience in that section for two years minimum under the supervision of a certified pathologist within the last five years.
    d. Must have the recommendation of the program director and the lab department manager before eliminating one or part of a rotation.

Student Responsibilities: The student will demonstrate the following affective, professional and ethical behavior:

1. Demonstrate an effort to achieve professional excellence by showing initiative to do extra tasks and show a willingness to complete unsolicited tasks.

2. Prepare for daily class assignments in an organized fashion and participate in class discussions (volunteers in class to answer questions and actively discuss class issues). Lack of preparation for class may be demonstrated in failing quiz grades.

3. Accepts and acts on advice from instructors

4. Does not argue with the instructor or solicit other students to argue with the instructor.

5. Assumes responsibility for behavior by following rules and policies. For example, follows the dress code and rules of the classroom.

6. Displays confidence, yet recognizes limitations of being a student.

7. Acts in a professional manner and maintains patient confidentiality according to HIPPA rules.

8. Works well in the School of Histotechnology as a team member with the other students and instructors. Contributes to the initiatives at hand in a positive manner.

9. Demonstrates respect to fellow students as well as instructors.

10. Reports to class on time and is present on all days as assigned.

11. Demonstrates hospitality standards of the profession and hospital to all students and instructors. Shows courtesy to other students and instructors similar to the hospitality they would show a guest in their home.

Sentara RMH School of Histotechnology

Library Resources

Sentara RMH Virginia Funkhouser Health Sciences Library / Sentara RMH Medical Center
2010 Health Campus Drive
Harrisonburg, VA 22801

540-689-1777 phone
500-689-1770 fax
RMH_RMHLibrary@sentara.com

8:00AM – 4:30PM Monday – Friday

1 FTE professional staff: **Megan D. Khamphavong, MSLS**
Librarian
8 years post-degree professional experience in health sciences libraries; at Sentara RMH since 2007

Facility:
1,400 sq. ft.
Opened in May 2010
9 study carrels (7 outfitted with PCs)
1 network Xerox WorkCentre photocopier / fax / printer / scanner

Collections & Services:

6,000+ print and electronic resource titles, of which

- ~4,400 are clinical, including 22 anatomic models
- ~1200 in Leadership, management, business administration, medical staff & governance
- ~200 in Training & development (primarily audiovisuals)
- ~300 in Grief

5,000+ titles of print and electronic journals related to health/medicine

- with subject specific titles that include the following areas related to clinical laboratory science:
    - anatomy
    - cytology
    - histocytochemistry
    - laboratory techniques and procedures
    - microbiology
    - microscopy
    - mycology

- parasitology
- pathology
- physiology
- virology

Research and reference databases, plus specialty search tools available through the EBSCO Discovery Service

- Research and reference databases
  - Biomedical Reference Collection: Comprehensive
  - CINAHL Plus with Full Text
  - Cochrane Collection Plus
  - eBook Collections
  - Education Source
  - ERIC
  - GreenFile
  - Health Business Elite
  - LISTA
  - MEDLINE with Full Text
  - Nursing and Allied Health Collection: Comprehensive
  - PsycEXTRA
  - Psychology and Behavioral Sciences Collection
  - SocINDEX

- Specialty resources
  - DynaMed
  - Nursing Reference Center Plus
  - Micromedex
  - Lexicomp
  - Natural Medicines
  - Scientific & Medical ART Imagebase (SMART)

CyberTools electronic integrated library system that includes

- an electronic, searchable web-based catalog that documents the resources in the SRMH VFHSL collection

Consolidated acquisitions for information resources across departments within Sentara RMH Medical Center and the Medical Group

Interlibrary loan and article copy services, including

- membership and participation in the National Network of Libraries of Medicine

Mediated literature searching and individual, as well as group training offered in search techniques

Sentara RMH School of Histotechnology

HTL 511 Orientation Lecture Objectives

The HTL student will at the completion of the Orientation course, reading assignments, and exercises with an accuracy of 70% on a written exam:

1. Recognize agencies in hospital and lab regulation.
    - ASCP
    - CAP
    - CLIA
    - AABB
    - OSHA
    - JCAHO
    - DNV
2. Describe quality assurance in the lab including:
    - Controls
    - Validation
    - Verification
    - Calibration
    - Proficiency testing
3. Define:
    - Laboratory information system
    - Healthcare Information system
    - Electronic medical Record
4. Define and demonstrate HIPAA regulations.
5. Describe security and patient safety and how changes have occurred over the years to increase safety and security.
6. Explain Six Sigma and Lean and importance in the laboratory.
7. Define and demonstrate ethics.
8. Define and demonstrate professionalism.
9. Describe the HTL certification process.
10. Discuss histotechnology career possibilities.
11. Demonstrate and recognize chemical, mechanical, and biological hazards in the lab.
12. Describe infections agents, diseases associated and prevention of:
    - HIV
    - HCV
    - HBV
    - TB
    - CJD
13. Demonstrate proper handwashing and universal precautions.

14. Define engineering controls and relate to their use in the lab.
    - Fume hoods/Ventilation systems
15. Describe mechanical hazards and OSHA regulations in the lab.
    - Sharps injuries
16. Define TWA, PEL, STEL of chemicals routinely used in the lab.
17. Identify hazardous chemicals that are routinely used.
18. Determine storage, disposal, and spill cleanup for hazardous chemicals.
19. Recognize pictograms and chemical labeling.
20. Define and locate SDS.
21. Describe and demonstrate fire safety and the use of:
    - NFPA diamonds
    - Fire extinguishers
    - P.A.S.S
    - R.A.C.E
22. Define ergonomics and relate to possible hazards in histology.
23. Recognize and respond the hospital codes.
24. Utilize bomb threat cards in the even of a threatening phone call.
25. Demonstrate basic lab math and solution prep that is commonly used in histology.
    - Percentages
    - Weight per volume
    - Volume per volume
    - Dilutions
    - Metric conversions
    - Gravimetric factor
    - Temperature conversions
26. Define pH and buffer solutions.
27. Recognize common instrumentation utilized in the histology lab:
    - Embedding center
    - Microtomes
    - Microscopes
    - Tissue processor
    - Water bath
    - Stainer
    - Oven
    - Cover slipper
    - pH meters
    - Microwaves
28. Correlate maintenance of all instruments with laboratory quality control.
29. Define common prefixes, suffixes, and root words in medical technology.

Orientation Course—MLS and HTL Schools

Orientation Grade; Professionalism, Ethics, and Affective Behavior—Counts ½ of Orientation Grade. To be averaged with the Orientation written exam at the completion of the didactic segment of the program.

Objectives

The student will be able to demonstrate the following affective, professional, and ethical behavior during the didactic portion of the program with a minimum of 70% on the following characteristics:

(student will be rated on the Professionalism grid and a grade will be calculated as per the grid)

1. Demonstrate an effort to achieve professional excellence by showing initiative to do extra tasks and show a willingness to complete unsolicited tasks.
2. Prepare for daily class assignments in an organized fashion and participate in class discussions (volunteers in class to answer questions and actively discuss class issues). Does not argue with the instructor or solicit other students to argue with the instructor. Lack of preparation for class may be demonstrated in failing quiz grades.
3. Accepts and acts on advice from instructors.
4. Assumes responsibility for behavior by following rules and policies. For example, follows the dress code and rules of the classroom.
5. Displays confidence, yet recognizes limitations of being a student.
6. Acts in a professional manner and maintains patient confidentiality according to HIPPA rules.
7. Works well in the MLS and HTL School as a team member with the other students and instructors. Contributes to the initiatives at hand in a positive manner.
8. Demonstrates respect to fellow students as well as instructors.
9. Reports to class on time and is present on all days as assigned.
10. Demonstrates hospitality standards of the profession and hospital to all students and instructors. Shows courtesy to other students and instructors similar to the hospitality you would show a guest in your home.

ProfessionalismObjectives

HTL 511 Orientation

Instructors: Shana R. Splawn, HTL(ASCP)^{CM}

Method of Instruction: Lecture, discussion, question, and answer

Goal: To educate the student in laboratory safety, professionalism, ethics, , quality assurance, method validation and statistical approaches to data evaluation so that they may function as an entry level medical laboratory scientist or histotechnologist.

Textbook:

Carson, Freida L. (2020) Histotechnology: A Self-Instructional Text. 5th ed. ASCP Press.

Suvarna, S. Kim (2019) Bancroft's Theory and Practice of Histological Techniques. 8th ed. Churchill Livingstone Elsevier

Extensive handouts will be utilized in the class.

Pre-requisite Courses:

A four-year degree with required courses in chemistry and biology and math for entry into the Sentara RMH HTL School.

ORIENTATION LECTURE SCHEDULE

DATE:	TOPIC:	READING ASSIGNMENT:
6/17/2024	**I. Introduction to the Lab and Healthcare**	Carson, pg. 344-350
	Healthcare Regulatory Agencies: ASCP, CAP, CLIA, AABB, JCAHO, DNV	
	Quality Assurance: Controls, Validation, Verification	
	Calibration, Proficiency Testing	
	Security and Patient Safety: Laboratory Information System	
	Healthcare Information System, Electronic Medical Record	
	Medical Ethics and Professionalism	
	HTL Certification	
6/18/2024	**II. Laboratory Safety**	Carson, pg. 1-12
	Chemical Hazards: Storage, Disposal, SDS (Safety Data Sheets), Pictograms	Bancroft, pg. 12-24
	Biological Hazards: Infectious agents, Prevention	
	Mechanical Hazards: PPE (Personal Protective Equipment) and Environmental Controls	
	Fire Safety: NFPA, Extinguishers, R.A.C.E, P.A.S.S.	
	Ergonomics	
	Sentara Policy: Codes and Bomb Threat Cards	
6/19/2024	**III. Laboratory Math and Solution Prep**	Carson, pg. 45-54
	Percentage: Weight per volume, Volume per volume	Handouts
	Dilutions, Metric Conversions, Molar and Normal Solutions	
	Gravimetric Factor, Temperature Conversion	
6/20/2024	**IV. Instrumentation in the Histology Laboratory**	Carson, pg. 14-39
	Microtomes, Microscopes, Embedding Center, Tissue Processor	
	Water Bath, Oven, Automated Stainer, Coverslipper, pH Meter	
	Microwaves	

ORIENTATION LECTURE SCHEDULE

DATE:	TOPIC:	READING ASSIGNMENT:
	Maintenance	
6/21/2024	**VI. Medical Terminology and Histology Case Study**	
	Medical Terminology: Prefixes, Suffixes, Root Words	
	Histology Case Study	
6/24/2024	**FINAL EXAM**	

Sentara RMH School of Histotechnology

HTL 502 Fixation and Microanatomy Lecture Objectives

The HTL student will at the completion of the Fixation and Microanatomy course, reading assignments, and lab exercises with an accuracy of 70% on a written exam, practical, or oral exam:

Fixation Objectives

1. Describe the role fixation plays in general histology
2. Describe the functions of fixation and how they impact tissue specimens
3. Describe each function of fixation
4. Implicate time as a factor in fixation
5. Identify the criteria for fixed vs autolyzed tissues
6. Relate the notion of refractive index to tissue sections and the impact on fixation
7. Correlate the volume ratio principle with specimen size
8. Analyze outside influences on fixation
    - Temperature
    - Size of specimen
    - Tissue to fixative volume ratio
    - Time
    - Tissue storage
    - pH
    - Osmolality
9. Categorize fixation factors by chemical characteristics
10. Predict cellular effects of fixation
11. Define formaldehyde as a chemical and fixative
12. Differentiate between formaldehyde and formalin

13. Describe the process of formalin fixation
14. Assess the formation of formalin pigment
15. Detail the steps to eliminate formalin pigment
16. Analyze variations of formalin
17. Cite general hazards of formalin
18. Characterize glutaraldehyde and differentiate it from other aldehyde fixatives
19. Describe exposure hazards for glutaraldehyde
20. Characterize glyoxal, differentiating it from other aldehyde fixatives
21. Detail the hazard risks for glyoxal
22. Describe general categorize features of precipitate and oxidizing fixatives
23. Detail fixation method and characterize chemical hazards
    - Acetic acid
    - Alcohols
    - Acetone
    - Osmium tetroxide
    - Potassium dichromate
    - Chromic acid
24. Analyze chromium pigment as a side product of fixation
25. Describe and categorize features of mercurials, picrates, zinc salts and HOPE fixatives
26. Detail fixation method and characterize chemical hazards
    - Mercuric chloride
    - Picric acid
    - Zinc chloride
    - HOPE
27. Analyze mercury pigment as a side product of fixation
28. Differentiate between compound and non-aqueous fixatives
29. Characterize the following fixatives
    - B-5

- Bouins
- Gendre
- Hollande
- Zenker
- Helly
- Susa
- Zamboni
- Orth
- Carnoy
- Clarkes

30. Analyze the counterbalancing effects of compound fixatives
31. Describe the importance of transport mediums and how they differ from fixatives
32. Define artifact, endogenous and exogenous pigments
33. Differentiate between Hematogenous vs Non-hematogenous pigments
34. Discover the source of histologic pigments
35. Characterize/differentiate the optical activity of pigments
36. Correlate presentation of pigments with clinical diagnosis
37. Detail pigments impact on histological stains
38. Correlate autolysis and its effects on fixation
39. Categorize issue in fixation applying troubleshooting common errors
    - Delayed fixation
    - Incomplete fixation
40. Identifying the micro and macroscopic difference between well fixed and poorly fixed tissues
41. Examine fixation considerations prior to tissue processing
42. Analyze and identify the effects of poor fixation on immunohistochemistry

<u>Microanatomy Objectives</u>

43. Define the basic tissue types and what makes them unique
44. Identify classifications of epithelia and examples of tissues where they reside

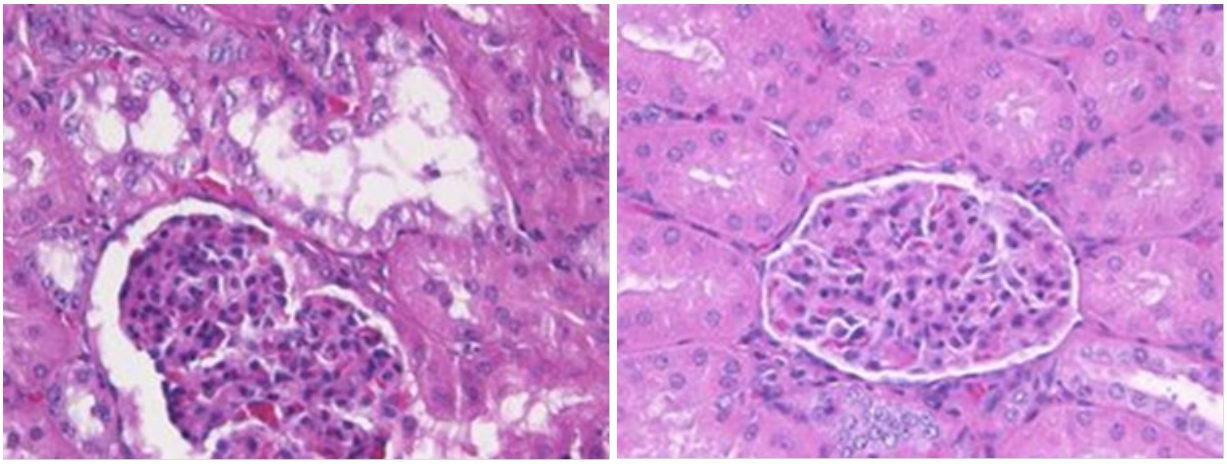
45. Characterize surface modifications of epithelia and their functions
46. Evaluate glandular basis of tissue
    - Categorize glandular type tissue based upon morphology
47. Differentiate various fibers, cells, and ground substance of connective tissue
48. Describe features of adipose tissue
    - Differentiate white from brown adipose tissue
49. Identify cell lines involved with hematopoiesis
50. Classify morphologic features of bone marrow sections
51. Cores and smears
52. Determine differences between bone marrow vs. peripheral blood smears
53. Evaluate morphologic components of bone specimens
    - Cortical vs spongy bone
54. Analyze the processes of bone epiphysis
55. Differentiated between types of muscle tissue according to morphology
56. Overview the common morphologic components of neurons
    - Classify neuron types
57. Differentiate protective tissues that line the central nervous system
58. Identify the morphologically distinct constituents of the spinal cord
59. Classify glial support cells from other neural tissue
60. Establish the major morphologic features of brain tissue
61. Distinguish the structural layers and features of the peripheral nervous system
62. Overview structural layers of the circulatory system
63. Define tissues layers of blood vessels
64. Compare and contrast arteries versus veins
65. Analyze the features of elastic tissues in blood vessels
66. Overview the component layers of the heart
    - Demonstrate Purkinje fibers as a unique feature of heart tissue
67. Differentiate between each form of lymphoid tissue

68. Identify morphologic presentation of lymph node
    - Correlate role of reticulin fibers in lymph node morphology
69. Characterize cellular features of the spleen according to sections of red and white pulp
70. Describe the cellular features of the thymus
71. Overview layers of the skin and relate their histologic constituents familiar with each layer
72. Characterize skin glands and their identification particular to a given layer
73. Formulate a method for differentiating skin from other like tissue sections
74. Overview major constituents of cellular components of the upper gastrointestinal tract
75. Analyze differentiating junctions between the esophagus and gastric tissue
76. Identify specific cells contribution to gastric tissue
77. Overview layers of the large and small intestines
    - Identify absorptive features of the small bowel
    - Compare and contrast the epithelium of the digestive system
    - Characterize unique morphologic variability between segments of the small intestines
78. Differentiate between segments of the small bowel according to their unique morphologic components
79. Survey degrees of hepatic structures
80. Classify layers of the gallbladder
81. Overview common structures of the kidney following from the renal pelvis through the urethra
82. Characterize bladder tissue according to its unique transitional epithelia
83. Differentiate tubular structures of the ureter and urethra
84. Compare and contrast features of the male and female urethra
85. Describe features of the thyroid gland
86. Contrast parathyroid with thyroid tissue
87. Differentiate between exocrine/endocrine glands of the pancreas
88. Classify layers of the adrenal gland and their role in tissue function and identification
89. Characterize and differentiate the major cellular components of the male reproductive organs
    - Testicle and prostate

90. Characterize and differentiate the major cellular components of the female reproductive organs
    - Uterus, ovaries, fallopian tubes, placenta, and breast tissue
91. Identify uterus tissue according to hormone stimulation
92. Classify features of vaginal tissue
93. Determine cellular features of the respiratory system from trachea to alveoli
    - Identify common morphologic features differentiating nasal tissue from trachea and other respiratory epithelium
    - Differentiate between type I and II alveolar cells
94. Overview morphologic features of the eye
95. Characterize cellular layers of the retina
96. Identify common pathologic nomenclature and their definitions
97. Characterize the criteria for determining benign vs. malignant masses according to their
    - Differentiation
    - Rate of growth
    - Local invasion
    - Metastasis
98. Classify necrosis according to morphological patterns and identify tissues by those patterns
99. Describe microscopic identification of cancer cells

Sentara RMH School of Histotechnology

HTL 502 Fixation and Microanatomy



Instructor: Shana Splawn, MBA, HTL(ASCP)^{CM}

Goal: To educate students in routine histology fixation and microscopic anatomy so that they may function as a histotechnologist in a surgical pathology laboratory.

Method of Instruction: Lecture, discussion, slide review, question and answer.

Prerequisites: Students should possess the following.

Bachelor's degree
30 semester hours of chemistry and biology
One college level math course

Required Texts:

Carson, Freida L.(2020) *Histotechnology: A Self-Instructional Text*. 5th ed. ASCP Press.

Suvarna, S. Kim (2019) *Bancroft's Theory and Practice of Histological Techniques*. 8th ed. Churchill Livingstone Elsevier

Brown, Richard W. (2009) *Histological Preparations: Common Problems and Their Solutions*. College of American Pathologists.

Instructions: Bring texts to class every day.

FIXATION LECTURE SCHEDULE

DATE:		TOPIC:	READING ASSIGNMENT:
8/2/24	I.	Intro to Fixation • Principle of fixation • General features	Carson, p. 56-58 Brown, p. 1-2 Bancroft, p. 40-42, 74
8/5/24	II.	Fixation Factors • Influencing features ○ Temperature ○ Size/ratios ○ Time ○ Storage ○ Osmolality ○ pH	Carson, p. 58-62 Bancroft, p. 50-52
8/7/24		**Fixation Exam 1**	
8/9/24	III.	Aqueous Fixatives 1 • Formaldehyde • Other aldehyde fixatives	Carson, p. 62-67 Bancroft, p.44-48, 56, 221-222, 437-438
8/12/24	IV.	Aqueous Fixatives 2 • Precipitate/oxidizing fixatives	Carson, p. 66-67 Bancroft, p. 43, 48-49, 57-59, 222
8/14/24	V.	Aqueous Fixatives 3 • Mercury fixatives • Picrates • Zinc salts • HOPE fixatives	Carson, p. 67-71 Bancroft, p. 48-50, 56-58
8/16/24		**Fixation Exam 2**	
8/20/24	VI.	Compound Fixatives • Combinations of aqueous fixatives	Carson, p. 72-76 Bancroft, p. 50, 56-59
8/22/24	VII.	Fixative Pigments • Hematogenous/Non-hematogenous • Optical pigment activity • Clinical correlations • Impacts on stains	Carson, p. 78, 234 Brown, p. 8 Bancroft, p. 198-206, 221-228
8/23/24	VIII.	Incomplete Tissue Fixation • Autolysis • Troubleshooting	Carson, p. 78-81 Brown, p. 3-5, 7-8, 143 Bancroft, p. 74, 373-374

FIXATION LECTURE SCHEDULE

DATE:	TOPIC:	READING ASSIGNMENT:
	• Identifying microscopically • Effects on immunohistochemistry	
8/26/24	**Fixation Exam 3**	
9/3/24	Cumulative Review	
9/5/24	**Fixation Final Exam**	
MICROANATOMY		
6/27/24	I. Intro to Microanatomy	diFiore, p. 43-83
7/1/24	II. Epithelia and Connective Tissue	
7/3/24	III. Hematopoiesis, Bone and Muscular Tissue	diFiore, p. 87-165
7/8/24	IV. Brain and Neural Tissue	diFiore, p. 171-213
7/10/24	V. Circulatory and Immune Systems	diFiore, p. 217-257
7/12/24	**Exam 1 – Microanatomy**	
7/15/24	VI. Integumentary System and Upper GI	diFiore, p. 260-281, 313-337
7/17/24	VII. Lower GI and Accessory Digestive Organs	diFiore, p. 341-385
7/19/24	VIII. Urinary and Endocrine Systems	diFiore, p. 417-473
7/22/24	**Exam 2 – Microanatomy**	
7/24/24	IX. Male and Female Reproductive Systems	diFiore, p. 477-555
7/26/24	X. Respiratory and Sensory Organs	diFiore, p. 389-413, 563-571
7/29/24	XI. Overviewing Pathology	
7/31/24	**Exam 3 – Microanatomy**	
8/2/24	Microanatomy Review	
8/5/24	**Final Exam – Microanatomy**	

Sentara RMH School of Histotechnology

HTL 503 Processing/Embedding Lecture Objectives

The HTL student will at the completion of lecture on processing/embedding, reading assignments, and lab practice with a minimum accuracy of 70% on a written exam, practical, or oral exam:

Lecture 1:

1. Describe the central principle of processing
2. Depict each of the stages of processing generalizing their roles
3. List and explain factors affecting processing rate
4. Compare/contrast forms of tissue processors
5. Describe the importance of general processor maintenance

Lecture 2:

6. Identify the items commonly found on a gross bench
7. Describe the events in performing gross dictation
8. Differentiate between small and complex tissue submission
9. Characterize different methods in obtaining tissue biopsies

Lecture 3:

10. Apply Fick's law as a principle of tissue processing
11. Describe the importance of tissue porosity
12. Relate the effects of fixation to tissue porosity
13. Outline the chemical and physical influence of processing reagents
14. Examine the major components of a general closed tissue processor
15. Differentiate the benefits of a closed versus microwave processor
16. Outline the functional property of microwave processing

17. Examine histologic reagent interactions with microwaves

Lecture 4:

18. Detail the principal importance of dehydration for tissue processing
19. Categorize and differentiate the following dehydrants and their uses in tissue processing:
    - Alcohols (meth, eth, but…)
    - Chloroform
    - Dioxane
    - THF

Lecture 5:

20. Describe the principle use of clearants in tissue processing
21. Classify the general properties of clearing agents
22. Categorize clearing reagents by chemical properties analyzing the pros/cons of each

Lecture 6:

23. Describe the importance of infiltration mediums in tissue processing
24. Illustrate paraffin as the primary infiltration agent of choice
25. Evaluate additives and their effects on paraffin's properties
26. Characterize alternative methods of tissue infiltration

Lecture 7:

27. Distinguish the steps involved in routine processing schedule
28. Detail the steps in rapid processing
29. Assess the criteria for rapid processing
30. Justify cold ischemic times for breast specimens and their impacts on specialized testing

Lecture 8:

31. Characterize issues in tissue processing as occur either pre or post processing
32. Determine the cause of processing errors

33. Characterize standard validation of tissue processing protocols
34. Evaluate reprocessing protocols

Lecture 9:

35. Identify the principle of tissue decalcification
36. Determine criteria for performing decalcification
37. Evaluate methods of decalcification
    - Acidic methods
    - Chelating methods
    - Electrolytic ionization
    - Ion-exchange resins
38. Classify the end point for tissue decalcification
39. Characterize common decalcification issues
40. Outline processes for cytologic cell block preparations

Lecture 10:

41. Characterize embedding equipment reviewing their uses
42. Evaluate proper tissue orientation for embedding common tissue elements
    - Skin (punch, shave, and ellipse)
    - Tubular structures
    - Walled structures
    - Biopsies
    - Bone
43. Examine tissue microarray development methods

Lecture 11:

44. Evaluate proper tissue orientation for embedding common tissue elements
    - Skin (punch, shave, and ellipse)

- Tubular structures
- Walled structures
- Biopsies
- Bone

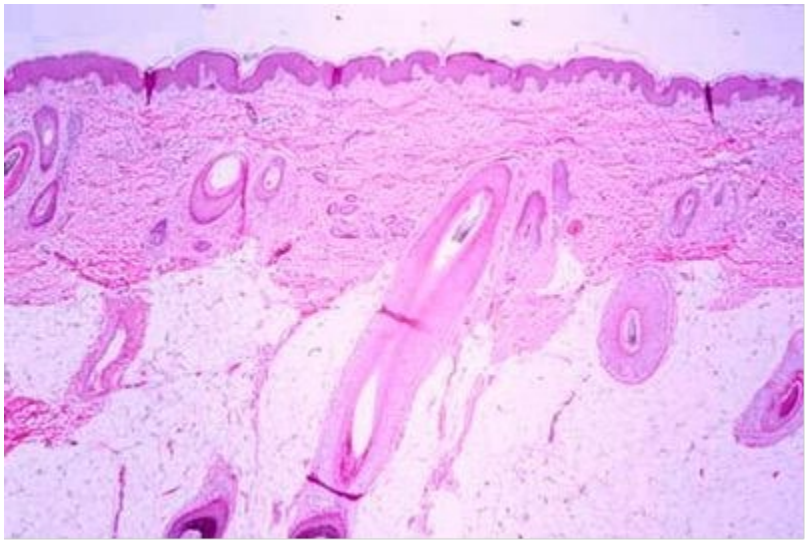
45. Outline common prevention methods in embedding

<u>Overall:</u>

46. Practice safety rules and regulations at all times
47. Utilize standard precautions for all areas of the lab
48. Problem solve issues as they occur in the lab

Sentara RMH School of Histotechnology

HTL 503 Processing and Embedding



H & E Slide of skin

Instructor: Shana Splawn, MBA, HTL(ASCP)^{CM}

Goal: To educate the student in the proper submission, processing and embedding of surgical specimens. To enable students to adequately function in an active histology laboratory

Textbooks:

Carson, Freida L.(2020) *Histotechnology: A Self-Instructional Text*. 5th ed. ASCP Press.

Suvarna, S. Kim (2019) *Bancroft's Theory and Practice of Histological Techniques*. 8th ed. Churchill Livingstone Elsevier

Method of Instruction: Lecture, discussion, question and answer.

Prerequisites: Students should possess the following:

Bachelor's degree
30 semester hours of chemistry and biology
One college level math course

Instructions: Bring texts to class every day.

PROCESSING AND EMBEDDING LECTURE SCHEDULE

DATE:	TOPIC:	READING ASSIGNMENT:
6/19/24	I. Intro • Steps in tissue processing • Common processing variables • Processor instrumentation	Carson, p. 27-28, 86 Bancroft, p. 73-74, 77-79, 142 Brown, p. 2-3
6/20/24	II. Gross Handling • Gross examination • Tissue marking/orientation • Tissue sampling • Pre-processing	Bancroft, p. 64-72
6/24/24	III. Principles of Tissue Processing • Diffusion • Porosity • Osmolality • Diffusion and Fick's Law • Miscibility • Viscosity	Bancroft, p. 42, 77-79
6/26/24	**Exam 1**	
6/27/24	IV. Dehydration • Definition • Types of reagents • Grading of reagents • Time in reagent • Criteria/choice of use	Carson, p. 86-87 Bancroft, p. 75
7/1/24	V. Clearing • Definition • Types of reagents ○ Xylene ○ Clearite ○ Hemo-D ○ Universal Solvents • Time in reagents • Criteria/choice for use	Carson, p. 87-90 Bancroft, p. 75-76
7/3/24	VI. Infiltration • Definition • Types of reagents ○ Paraffin ○ Plastics ○ Epoxy Resin ○ Agar & Gelatin	Carson, p. 90-92 Bancroft, p. 76-77

PROCESSING AND EMBEDDING LECTURE SCHEDULE

DATE:	TOPIC:	READING ASSIGNMENT:
	• Time in reagent • Criteria/choice of use	
7/8/24	**Exam 2**	
7/10/24	VII. Processing Schedules • Routine • Biopsy • Breast/fatty tissue • Manual	Carson, p. 90-92 Bancroft, p. 73-74, 79-82, 436-442
7/12/24	VIII. Reprocessing/Troubleshooting • Pre vs. Post processing • Causes and processor errors • Validation protocol • Reprocessing protocol	Carson, p. 92-95 Bancroft, p. 80-82 Brown, p. 4-8
7/15/24	**Exam 3**	
7/17/24	IX. Specialty Processing • Frozen sections • Decalcification • Cytology cell block preparations	Carson, p. 100-102, 360-361 Bancroft, p. 285-291 Brown, p. 9-10

7/19/24	X. Embedding & Specimen Orientation
	• Definition
	• Tissue Types
	• Specimen Surface Identification
	• Orientation of Structures
	  ○ Tubes
	  ○ Skin
	  ○ Colon, gallbladder, cyst wall etc.
	  ○ Inked specimens
	• Embedding molds size and selection
		Carson, p. 96-99
		Bancroft, p. 77, 505-508

7/22/24	XI. Wrong Embedding and Review
	• Troubleshoot/evaluation
	  ○ Uncentered
	  ○ Unaligned
	  ○ Uneven
	  ○ Mushy
	  ○ Dry
	  ○ Poor consistency
	  ○ Wax separation
	• Outcome prevention
		Carson, p. 99
		Brown, p. 11-12

PROCESSING AND EMBEDDING LECTURE SCHEDULE

DATE:	TOPIC:	READING ASSIGNMENT:
7/24/24	**Exam 4**	
7/26/24	Review	
7/29/24	**FINAL EXAM**	

Sentara RMH School of Histotechnology

HTL 504 Microtomy Lecture Objectives

The HTL student will at the completion of lectures, reading assignments, and labs on microtomy with the measurement of minimum of 70% correct on a written exam, practical or oral exam:

Lecture 1:

1. Qualify requirements to produce good sections
2. Categorize and differentiate between the various microtomes and their uses
3. Determine the importance of general maintenance of the rotary microtome
4. Compare/contrast the advantages/disadvantages for microtome automation

Lecture 2:

5. Identify the different types of reusable blades and describe their uses
6. Detail the advantages of disposable blades over reusable microtome blades
7. Differentiate between high and low profile blades
8. Summarize the details of glass knives and their uses
9. Summarize the details of diamond knives and their uses
10. Outline the importance of clearance angles in tissue sectioning
11. Specify common issues when clearance angles are outside their normal parameters
12. Identify features of subbed and positively charged slides
13. Classify the ideal properties of moutants
14. Evaluate resinous versus aqueous mounting media

Lecture 3:

15. Review the standard equipment used in obtaining paraffin sections
16. Identify the factors that affect paraffin sections before and during micotomy

17. Detail the steps to produce good paraffin sections
18. Generalize tissue types importance in sectioning

Lecture 4:

19. Describe/determine troubleshooting options for the following:
    - Crooked/Curved ribbon
    - Chatter
    - Ribbon splitting
    - Sections that don't ribbon
    - Sticky ribbon, to the blade and elsewhere
    - Incomplete sections
    - Ribbon compression
    - Ribbon disintegration
    - Rolling ribbons
    - Hard/Dense tissue sections
    - Holes in ribbons
    - Air bubbles

Lecture 5:

20. Define cryotomy
21. Compare/contrast cryotomy versus microtomy
    - Detail components exclusive to cryostats
22. Differentiate between cryogens and cryoprotectants
23. Establish the factors affecting frozen sections
24. Detail common techniques for freezing specimens
25. Determine the advantages/disadvantages of frozen sections
26. Detail Intraoperative consultation

Lecture 6:

27. Describe general routine maintenance of the cryostat
28. Detail the steps involved in cryostat decontamination
29. Assess troubleshooting methods for handling: (identify problem and correct)
    - Section depth
    - Frosty cryostat
    - Smeared sections
    - Splintering sections
    - Unflattening sections
    - Curling sections
    - Ridged sections
    - Chatter
    - Hardened sections
    - Thick/Think sections

Lecture 7:

30. Examine the uses of ultramicrotomy over standard microtomy
31. Compare/contrast ultramicrotomes vs standard microtomes
32. Overview common tools and components of ultramicrotomy
33. Summarize ultramicroscopy specific processing and embedding
34. Characterize block trimming for ulramicrotomes

Lecture 8:

35. Organize general sectioning for ultra-microtomes
    - Thicks and thins
36. Describe and perform method for picking up sections
37. Detail grid storage

38. Describe/Determine troubleshooting options for: (identify and correct)
    - Sections thick-thin
    - Microtome vibrations
    - No sectioning
    - Wet face
    - Loss of sample section
    - Chatter
    - Compression
    - Sections drag over the knife
    - Sticky sections
    - Sections that won't pick up
    - Solve the problems with all of the above categories as they occur
39. Overall:
    - Demonstrate and practice safety technique and standard precautions
    - Analyze and solve problems as they occur in the lab

Sentara RMH School of Histotechnology

HTL 504 Microtomy

Leica 2135 Microtome

Instructor: Shana Splawn, MBA, HTL (ASCP)^{CM}

Goal: To educate the student in Microtomy Techniques so that they may function as a beginning level technologist/scientist in the Histology laboratory.

Textbooks:

Carson, Freida L.(2020 *Histotechnology: A Self-Instructional Text*. 5th ed. ASCP Press.

Suvarna, S. Kim (2019) *Bancroft's Theory and Practice of Histological Techniques*. 8th ed. Churchill Livingstone Elsevier

Brown, Richard W. (2009) *Histological Preparations: Common Problems and Their Solutions*. College of American Pathologists.

Method of Instruction: Lecture, discussion, question and answer.

Prerequisites: Students should possess the following.

Bachelor's degree
30 semester hours of chemistry and biology
One college level math course

Instructions: Bring texts to class every day. Complete assignments.

MICROTOMY LECTURE SCHEDULE

DATE:	TOPIC:	READING ASSIGNMENT:
6/18/24	I. Intro a. Rotary b. Sledge c. Sliding d. JB-4 e. Cryostat f. Ultra microtome g. Automation features i. Manual ii. Semi-automated iii. Fully-automated h. Maintenance	Carson, p. 17-18, 25-26 Bancroft, p. 84
6/21/24	II. Blades/Slides/Mountants a. Disposable i. High Profile ii. Low Profile b. Reusable c. Glass d. Diamond *Important Angles i. Wedge Angle ii. Bevel Angle iii. Tilt Angle iv. Clearance Angle v. Cutting Facet e. Tissue Adherence f. Slide Coatings g. Mounting Media and Refractive Index	Carson, p. 18-19, 25-26, 32-34, 137-140 Bancroft, p. 85-86, 535-536
6/25/24	**Exam 1**	
6/28/24	III. Paraffin a. Equipment i. Flotation bath ii. Slide drying oven or hot plate iii. Fine point or curved forceps iv. Sable or camel hair brush v. Scalpel vi. Clean slides vii. Teasing needle or probes viii. Ice tray ix. Chemical-resistant pen or pencil x. Automated printers b. Trimming tissue block c. Cutting Sections	Brown, p. 15 Carson, p. 31-32, 35-36 Bancroft, p. 85-87

MICROTOMY LECTURE SCHEDULE

DATE:	TOPIC:	READING ASSIGNMENT:
	d. Floating Sections e. Drying sections	
7/2/24	IV. Troubleshooting a. Crooked ribbons b. Block face unevenly sectioned c. Holes in the sections d. Failure for a ribbon to form e. Lifting of section from blade as block is raised f. Washboarding g. Chatter h. Thick and thin sections i. Compression j. Lengthwise scratches or spits in ribbon k. Flyaway sections	Brown, p. 16-23 Carson, p. 19-25 Bancroft, p. 87-90.0
7/9/24	**Exam 2**	
7/11/24	V. Frozens a. Equipment i. Cabinet ii. Microtome iii. Cryoembedding medium iv. Blade v. Anti-roll plate vi. Sable or camel hair brush vii. Chuck b. Uses for frozen sections i. Rapid diagnosis for intra-operative consults ii. Enzyme histochemistry (Muscle Bx) iii. Immunoflorescents (Skin and Renal Bxs) iv. Demonstration of Lipids c. Freezing techniques i. Slamming ii. Liquid Nitrogen iii. Liquid Nitrogen-Isopentane (Histochemistry iv. Electric Cryobath-Isopentane v. Peltier vi. Aerosol sprays vii. 30% Sucrose d. Decontamination of Cryostat e. Intraoperative consultation	Brown, p. 27-31 Carson, p. 25-27, 102-104 Bancroft, p. 88-93

MICROTOMY LECTURE SCHEDULE

DATE:	TOPIC:	READING ASSIGNMENT:
7/16/24	VI. Cryostat a. Freezing artifact b. Block loosens from chuck while sectioning c. Tissue not embed flat on chuck d. Section shreds e. Section bunches up on knife edge f. Thick and thin sections g. Section incomplete h. Tissue chipping out of block	Brown, p. 32-34 Carson, p. 102-104
7/18/24	**Exam 3**	
7/23/24	VII. Ultramicrotomy a. Trimming b. Thick and thins c. Picking up thick sections d. Staining thick sections e. Picking up thin sections f. Section thickness g. Staining thin sections h. Grid storage i. Troubleshooting	Bancroft, p. 442-444
7/25/24	VIII. Troubleshooting Ultramicrotomy a. Sections thick-thin b. Microtome vibrations c. No sectioning d. Wet face e. Loss of sample section f. Chatter g. Compression h. Sections drag over the knife i. Sticky sections j. Sections that won't pick up	Bancroft, p. 445-449
7/30/24	**Exam 4**	
8/1/24	Review	
8/6/24	**Final Exam**	

Sentara RMH School of Histotechnology

HTL 505 Staining and Immunohistochemistry
Lecture Objectives

The HTL student will at the completion of the Staining and Immunohistochemistry course, reading assignments, and lab exercises with an accuracy of 70% on a written exam, practical, or oral exam: (Cognitive and Psychomotor Domains)

<u>Lecture 1: Staining Mechanisms and Dyes</u>

1. Define the general theory of stains
2. Describe dyes and their functional components
    - Chromophores and auxochromes
3. Analyze dye classification systems
4. Examine dye interactions with tissues, solvents and stains
5. Distinguish influences on dye selectivity

<u>Lecture 2/3: H/E Staining Principles and Procedures</u>

6. Distinguish the methods of hematoxylin ripening
7. Identify the chromophores in hematoxylin
8. Formulate the mechanism of hematoxylin staining
9. Identify the cellular targets of hematoxylin
10. Clarify bluing and it's impacts on hematoxylin
11. Differentiate between the formulations of hematoxylin
12. Formulate the mechanism of eosin staining
13. Identify the cellular targets of eosin
14. Differentiate between formulation of eosin
15. Detail the steps of H&E stain
16. Compare/contrast manual and automated staining methods
17. Apply H&E staining method to frozen sectioning
18. Describe/determine troubleshooting options for the following:
    - Smudgy nuclei
    - Lack of eosin shading
    - Poor contrast
    - Cytoplasmic stain is too dark
    - Cytoplasmic stain is too light
    - Nuclear stain is too dark
    - Nuclear stain is too light

- Uneven staining
- Red-brown nuceli
- Blue stained tissue elements
- Stain precipitate
- Bleeding eosin, hazy staining

Lecture 4: Nucleic Acids Stains

19. Characterize general features of nuclear counterstains
    - Cite alternate stain uses
20. Characterize general features of cytoplasmic counterstains
    - Cite alternate stain uses
21. Overview Feulgen Reaction
    - Stain principle/method
    - Sample preparation
    - Stain intrepretation
    - Troubleshooting
22. Overview fast green-pyronin Y
    - Stain principle/method
    - Sample preparation
    - Stain intrepretation
    - Troubleshooting
23. Investigate diagnosing Rickettsia in clinical pathology
    - Symptoms/manifestations
    - Clinical testing

Lecture 5: Polychromatic Stains

24. Overview the characteristics of polychromatic stains
25. Classify Romanowsky type dyes
26. Evaluate Geimsa staining profile
    - Stain principle/method
    - Sample preparation
    - Stain intrepretation
    - Troubleshooting
27. Investigate clinical correlations utilizing polychromatic staining
28. Malaria
    - Symptoms/manifestations
    - Clinical testing
29. Chronic leukemia
    - Symptoms/manifestations
    - Leukemia vs. lymphoma
    - Clinical testing

Lecture 6-8: Carbs in Pathology

30. Define carbohydrates (and like substances) according to their chemical and histological characteristics
31. Characterize glycogen by molecular structure briefly overviewing biological significance
32. Analyze functional properties of glycosaminoglycans
33. Overview the general functions of mucin
34. Categorize types of mucin
35. Classify carbohydrates according to their histologic properties
36. Differentiate between epithelial and connective tissue mucins
37. Identify the general staining mechanism for Periodic Acid Schiff
38. Classify variations of the PAS stain
39. Characterize the general staining mechanism for Alcian Blue staining
40. Classify variations of Alcian Blue staining
41. Troubleshoot common staining errors with Alcian Blue and PAS
42. Evaluate Barrett's esophagus and how compound special stains are using in the formulation of a diagnosis
43. Analyze staining mechanism of mucicarmine
44. Identify positive mucicarmine staining
45. Analyze staining mechanism of colloidal iron
46. Identify positive colloidal iron staining
47. Troubleshoot common errors with mucicarmine and colloidal iron
48. Evaluate Macular Corneal Dystrophy and how carbohydrate stains are used in diagnosis

Lecture 9-14: Connective tissue and muscle in Path

49. Review classification of connective tissue types
50. Identify connective tissue classification
51. Characterize features of connective tissues according to their category
52. Review histological classification of muscle tissue
53. Examine instances of connective tissues in pathology
    - Gout
    - Lipomas
    - Liposarcomas
54. Evaluate general staining mechanism of trichrome stain
55. Differentiate between one step and multi-step trichrome stains
56. Overview trichrome troubleshooting
57. Evaluate general staining mechanism of reticulin stain
58. Classify alternate reticulin staining techniques
59. Overview reticulin troubleshooting
60. Classify uses of elastic stains in general pathology
61. Evaluate Verhoeff's elastic stain principle
62. Examine lesser used variations of elastic stains
    - Weighert's

- Orcein's

63. Review troubleshooting methods for Verhoeff's and Aldehyde Fuschin staining
64. Examine specialized staining methods for lipids
65. Differentiate sample preparation for fat stains from routine histological procedures
66. Evaluate positive stain reaction
    - Oil Red O
    - Sudan Black
    - Toluidine Blue
67. Analyze fat staining's role in the development of diagnosing fat embolisms
68. Evaluate positive stain reactions
    - PTAH
    - PASM
69. Troubleshoot common staining errors with PASM
70. Examine PASM use in diagnosing pyelonephritis
71. Review special stain features for connective tissues

Lecture 15-20: Microorganisms in Pathology

72. Clarify the 5 standard categories of microorganisms
73. Describe bacteria categories and methods of classification
74. Differentiate bacteria identification morphologically or histologically
75. Overview clinical significance of select bacterium:
    - *Actinomyces israelii*
    - *Nocardia asteroides*
76. Summarize fungi by biological characteristics
77. Overview clinical significance of select fungi:
    - *Aspergillus fumigatus*
    - *Bastomyces dermatitidis*
    - *Candida albicans*
    - *Coccidiodes immitis*
    - *Cryptococcus neoformans*
    - *Histoplasma capsulatum*
    - *Pneumocystis carinii (jirovecii)*
    - *Sporothrix schenckii*
78. Illustrate methods of viral detections using histology
79. Identify Gram's staining principle
80. Differentiate between gram positive and gram negative bacterium
81. Characterize the biological significance of gram positive vs. gram negative
82. Classify modifications of the gram stain noting their differences and advantages/disadvantages
83. Troubleshoot common gram staining errors
84. Evaluate bacterial meningitis correlating how gram stain is used to diagnose it
85. Classify characteristics of acid fast organisms
86. Overview and differentiate common acid fast organisms

87. Classify acid-fast stains noting their differences and advantages/disadvantages
    - Kinyoun
    - Ziehl-Neelsen
    - Fite
    - Auramine-Rhodamine
88. Troubleshoot common errors in acid-fast staining
89. Evaluate tuberculosis and how acid-fast staining is used in establishing a diagnosis
90. Characterize general features of Helicobacter pylori
91. Overview H. pylori infection mechanism
92. Classify acid-fast stains noting their differences and advantages/disadvantages
    - Diff Quik
    - Alcian Yellow-Toluidine Blue
    - IHC
93. Troubleshoot common errors in H. pylori stains
94. Evaluate the clinical presentation and diagnosis of gastric ulcers
95. Overview general features of spirochete organisms
96. Differentiate between Argyrophilic and Argentaffin Reactions
97. Classify acid-fast stains noting their differences and advantages/disadvantages
    - Warthin-Starry
    - Steiner-Steiner
98. Troubleshoot common errors in spirochete staining
99. Evaluate the clinical presentation and diagnosis of Lyme's Disease
100. Classify fungal stains noting their differences and advantages/disadvantages
    - Grocott Methenamine-Silver Nitrate
    - Chromic Acid-Schiff
    - Gridley
101. Troubleshoot common errors in fungal staining

<u>Lecture 21-23: Nervous System Pathology</u>

102. Outline division of the nervous system
103. Describe and differentiate between
    - Sensory/motor neurons
    - Somatic/autonomic neurons
    - Sympathetic/parasympathetic neurons
104. Classify general features and morphology of neurons and neuroglial cells
105. Associate previous special stain techniques for staining neural structures
106. Evaluate positive staining reactions
    - Bodian
    - Holmes
    - Beilschowsky
    - Sevier-Munger
    - Holzer

- Cajal
- Weil
- Cresyl Echt Violet
- Luxol fast blue

107. Characterize general troubleshooting methods of Bodian and Beilschowsky like stains
108. Characterize the clinical significance of targeting specific neural structures
109. Analyze neural stains in diagnosing Alzheimer's Disease
110. Analyze histologic interpretation of astrocytomas

Lecture 24/25: Amyloid in Pathology

111. Present clinical definition of amyloid
112. Analyze amyloid molecular structure and physical characteristics
113. Classify variation of amyloid compounds
114. Examine amyloid deposit optical activity
115. Evaluate the clinical implications of amyloidosis including general disease presentation with macro and micro diagnostics
116. Evaluate positive amyloid stains
    - Congo red
    - Crystal violet
    - Thioflavin T
117. Identify the importance of sample preparation in congo red stain
118. Troubleshoot common amyloid staining errors

Lecture 26: Iron & Bile & Melanin Stains

119. Evaluate iron, melanin and bile positive staining reactions
    - Prussian blue
    - Turnbull blue
    - Fontana-Masson
    - Schmorl's
    - Hall's method
120. Identify methods for bleaching melanin pigment in tissues sections

Lecture 27 & 28: Hormones in Histopathology

121. Overview the basic characteristics of systems in endocrinology
122. Outline the general interaction between hormones and receptors
123. Classify hormones according to the tissue in the endocrine system
    - Pituitary gland
    - Hypothalamus
    - Thyroid gland
    - Parathyroid gland
    - Adrenal gland
    - Pancreas

- Ovary
- Testis
- Thymus

124. Asses the connection between cellular proliferation and hormones
125. Evaluate challenges in hormone based carcinogenesis
126. Overview the hormonal risk in cancers of:
    - Endometrium
    - Breast
    - Prostate
    - Testicle
    - Thyroid
    - Adrenal gland

Lecture 29 & 30: Enzyme Histology

127. Outline factors affecting biologic enzymatic activity
128. Describe the main classification of enzymes
    - General features of each of the major subclasses
129. Walkthrough specimen handling and preparation for muscle biopsy specimens
130. Review anatomical and histologic characteristics of muscular tissue
131. Investigate clinical implications of enzyme studies with a general overview of muscle dystrophy
132. Evaluate staining methods for enzyme histochemistry
133. Identify their principle staining target
134. Review specimen sample preparations
135. Inspect positive stain reactions and general QC
136. Clarify common technicalities of staining protocols

Lecture 31: Electron Microscopy

137. Review operational EM factors:
138. Fixative selection and formulations
139. Specific buffer solutions
140. Microtomy preparations
141. Classify sample preparations specific to EM
142. Investigate specialty preparation for different specimens
143. Characterize the basic components of the transmission electron microscope
144. Identify stains for thick and thin sections and their uses
145. Analyze techniques in anticipation of process difficulties

Lecture 32: Cytology, Methods and Stains

146. Investigate the similarities/differences between cytology and histology
147. Overview specimen types and collection methods
148. Determine specimen specifications for cytologic specimen preparations
149. Examine cytology stains and their diagnostic significance

Immunohistochemistry Objectives

150. Basic fundamentals of immunohistochemistry
    - Identify the definition of immunohistochemistry
    - Overview antibodies following their development
        - Characterizing differentiation processes following B-cell production
        - Analyze antibody classification through mediated molecular processes
    - Organize modes of antibody interactions
    - Overview production and classification of antibodies for clinical testing
        - Polyclonal vs monoclonal
        - Animal host characteristics and selection
        - Sensitivity vs. specificity
    - Introduce the basis of fundamental draw backs to antibody mechanisms in clinical testing
        - Cross reactivity
        - Background staining
151. Systems of detection in immunohistochemistry
    - Evaluate basic principle of antigen/antibody demonstration
    - Characterize methods of antigen masking
    - Overview methods of antibody detection
    - Identify mechanism for double and multiplex staining
152. Immunohistochemistry preparation methods
    - Evaluate fixation and tissue processing as preparation for IHC
    - Qualify the effective influence of pH and tempature
    - Investigate HIER and EIER methods of antigen retrieval
    - Outline generic microwave AR protocol
    - Overview common enzyme and substrate in IHC methodologies
    - Identify the optimal dilution for titrated antibody reagents
    - Describe slide preparations for IHC
153. Protocol development in immunohistochemistry
    - Identify methods for introducing antibody staining protocols
    - Compare “home-brew” and kit based approaches to IHC protocols
    - Demonstrate selection of positive and negative controls
    - Outline components towards the development of an IHC protocol
    - Outline requirements for IHC validation
    - Contrast IHC validation in relationship to FDA approved testing methods
154. Quality control and troubleshooting IHC
    - Overviewing standard IHC staining presentations
    - Establish the criteria for evaluating quality control for IHC sections
        - Pre-analytic
        - Post-Staining

- Evaluate common troubleshooting strategies for immunohistochemical staining operations
    - Weak staining
    - No staining
    - Uneven staining
    - Non-specific staining
    - Background staining
    - Granular/precipitates

155. Methods of molecular detection: in situ hybridization
    - Characterize the fundamental principle of molecular biology and it's functional properties in diagnostic pathology
    - Differentiate between methods of in situ hybridization
    - Establish selectivity of probe assays
    - Evaluate sample preparations for hybridization techniques
    - Verify quality control methods and criteria
156. Diagnostic FISH
    - Describe the principle method of FISH and how it is different from other ISH methods
    - Adapt the FISH general procedure from ISH method
    - Characterize troubleshooting methods improving
        - Weak/no staining
        - Morphology
        - Background
        - Truncation
    - Analyze FISH scoring methods
    - Identify quantitative FISH studies and their diagnostic significance
157. Florescence staining and ISH alternatives
    - Describe advantages/disadvantages of CISH to other pathology testing methods
    - Identify alternate ISH techniques demonstrating their diagnostic applicability
    - Review fundamental processes of immunofluorescence
    - Examine immunofluorescence in histopathology
    - Evaluate limitations of immunofluorescence
    - Assess considerations for choosing between Immunofluorescence and immunohistochemistry
158. Flow cytometry
    - Identify the diagnostic importance of flow cytometry in molecular pathology
    - Characterize the components of the instrument and how data is collected
    - Overview methods of data analysis
    - Characterize specimen sorting and gating methods for further testing evaluations
    - Examine lasers integration into instrumental detection methods
    - Analyze sub-setting applications as a method of profiling specimen data
159. Metastatic carcinoma of unknown primary site

- Identify the criteria of cancers of unknown primary source
- Overview cellular lines of separate differentiation
- Outline work-up components for determining primary source tumors
- Characterize common IHC markers for determining cellular lines of differentiation
    - Including biochemical relevance in healthy versus pathologic tissue states

160. Amazing cytokeratin antigens and where to find them
    - Define intermediate filament proteins
    - Overview generic molecular composition and functions of cytokeratins
    - Characterize common markers of simple keratins
        - Detail clinical diagnostic utility of CK 7, 8, 18/19, 20
    - Characterize common markers of complex keratins
        - Detail clinical diagnostic utility of CK 5/6
    - Characterize common markers of non-epithelial keratins
        - Detail clinical diagnostic utility of pankeratin
161. Distinguishing supplemental markers in unknown cancers
    - Characterize the utility of coexpression of Vimentin
    - Identify components of supplemental markers
        - Differentiate between marker origins
        - Outline connection between other common diagnostic markers with supplemental markers
    - Classify the selection of specific markers to further indicate the origin of metastatic disease
    - Analyze targets of neuroendocrine markers
    - Overview diversity of paired box genes clarifying their diagnostic utility
162. Algorithmic approaches to histopathology diagnosis
    - Evaluate an algorithmic approach to classifying CUPs presentations for panel based IHC staining
        - Differentiate between selective markers
        - Correlate positive and negative paths of IHC stain development
    - Apply diagnostic methodology and panel stain selections to evaluate clinical CUPs presentation
    - Characterize molecule methods and their contribution to establishing a diagnosis
        - EGFR and ALK
163. Skin deep antigen markers
    - Identify components and areas of melanocyte presentation and development
    - Overview phenotypes of melanoma
    - Correlate common protein components connected in the demonstration of melanoma
    - Characterize melanoma makers
        - S-100, Calretnin, MART-1, HMB-45, KI-67
        - Identify common staining patterns of normal and disease states
    - Distinguish between melanoma and skin nevi both histologically and morphologically

        - Differentiate IHC staining distribution for both tissue presentations
    - Outline the clinical features of SCC and BCC
        - Analyze common diagnostic antibody expression patterns
        - Characterize poor prognostic factors for SCC and BCC

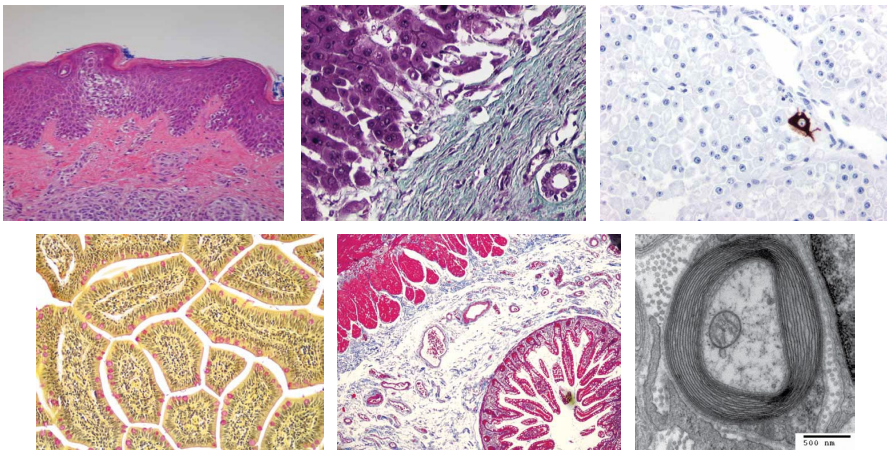
164. Immunohistochemistry of breast lesions
    - Overview classic and common pathologic breast morphology
        - Normal, myoepithelial, papillary, ductal, invasive, lobular, and fibroadenoma
    - Analyze immunohistochemical markers for breast in situ lesions
    - Formulate tumor identification stain panels method by IHC
    - Characterize methods for evaluating sentinel node biopsy collection and diagnostics
    - Assess theranostic stains and their role in directing patient care
165. Common immunostains of lymphoma
    - Organize common approaches towards establishing a lymphoma differential diagnosis
    - Classify the common presentation of Hodgkin's lymphoma
        - Differentiate between different varieties and subtypes of HL
    - Review principle diagnostic antigens of Hodgkin's lymphoma
    - Characterize supplemental markers and their contribution to immunostaining
    - Coordinate immunostaining markers to develop panel stains
        - Utilize panel stains to differentiate between subtypes of Hodgkin's lymphoma
        - Distinguish the Hans classifier for differentiating large cell varieties of non-Hodgkin lymphoma
166. Gastrointestinal immunohistochemistry
    - Overview classic and common pathologic GI morphology
        - Barrett esophagus, esophageal adenocarcinoma, neoplastic/non-neoplastic adenocarcinoma, and colorectal carcinomas
    - Analyze immunohistochemical markers for GI lesions
        - Correlate molecular/genomic applications of tumor classification
    - Formulate IHC staining panels for GI tumors
    - Assess theranostic stains and their role directing patient care

<u>General Objectives (Affective Domain Objectives)</u>

167. Demonstrate a professional behavior during class and on rotation.
168. Show interest and motivation in the subject being presented by preparing for assignments and asking questions as appropriate.
169. Attend class on time and on the designated day.
170. Offer to assist instructors and/or other students during the clinical year.
171. Present a professional appearance during attendance in the school.

Sentara RMH School of Histotechnology

HTL 505 Staining and Immunohistochemistry



Instructor: Shana Splawn, MBA, HTL (ASCP)^{CM}

Goal: To educate students in the routine histology hematoxylin/eosin stain, special stains, enzyme histochemical stains, and immunohistochemical stains so that they may function as a histotechnologist in a surgical pathology laboratory.

Method of Instruction: Lecture, discussion, slide review, question and answer.

Prerequisites: Students should possess the following.

Bachelor's degree
30 semester hours of chemistry and biology
One college level math course

Required Texts:

Carson, Freida L. (2020) *Histotechnology: A Self-Instructional Text*. 5th ed. ASCP Press.

Suvarna, S. Kim (2019) *Bancroft's Theory and Practice of Histological Techniques*. 8th ed. Churchill Livingstone Elsevier

Brown, Richard W. (2009) *Histological Preparations: Common Problems and Their Solutions*. College of American Pathologists.

Instructions: Bring texts to class every day.
*Note: This class is broken into two sections; however, sections overlap. Pay attention to dates.

STAINING AND IHC LECTURE SCHEDULE

DATE	TOPIC	READING ASSIGNMENT
8/6/24	I. Staining Mechanisms • Theory of Staining • Reagent/Solvent interactions • Reagent factors • Dye properties	Carson, p. 106-112 Bancroft, p. 114-123
8/8/24	II. H&E Staining Part 1 • Hematoxylin/eosin varieties • Stain mechanism • Regressive/progressive methods	Carson, p. 112-123 Bancroft, p. 126-137 Brown, p. 35-37
8/13/24	III. H&E Staining Part 2 • Frozen section methods • Troubleshooting	Carson, p. 125-131 Bancroft, p. 145-147 Brown, p. 38-47
8/15/24	**Stains Exam 1**	
8/16/24	IV. Nucleic Acids	Carson, p.131-134 Bancroft, p. 270-271, 500-502
8/20/24	V. Polychromatic Stains	Carson, p. 135-137
8/23/24	**Stains Exam 2**	
8/26/24	VI. Carbohydrates Structure and Pathology	Carson, p. 144-145 Bancroft, p. 176-183 Brown, p. 117, 125-127
8/28/24	VII. Periodic Acid Shift and Alcian Blue	Carson, p. 145-148, 151-155 Bancroft, p. 183-186 Brown, p. 92-93, 121-123, 128-132
8/30/24	VIII. Colloidal Iron and Mucicarmine	Carson, p. 149-151, 155-158 Brown, p. 127-128, 132 Bancroft, p. 186-188
9/3/24	**Stains Exam 3**	
9/5/24	IX. Connective Tissue and Muscle Structure and Pathology	Carson, p. 164-166 Bancroft, p. 153-162

STAINING AND IHC LECTURE SCHEDULE

DATE		TOPIC	READING ASSIGNMENT
9/9/24	X.	Trichrome	Carson, p. 166-169 Bancroft, p. 162-167 Brown, p. 95-101
9/11/24	XI.	Reticular Fibers	Carson, p. 176-181 Bancroft, p. 170-172 Brown, p. 103-108
9/13/24	XII.	Verhoff-van Gieson and Aldehyde Fuchsin	Carson, p. 169-174 Bancroft, p. 167-170 Brown, p. 109-112, 114-115
9/16/24	XIII.	Fat Stains	Carson, p. 186-188 Bancroft, p. 496
9/17/24	XIV.	Periodic Acid Methenamine Silver and Phosphotungstic Acid Hematoxylin	Carson, p. 181-186 Bancroft, p. 134-135 156-158 Brown, p. 117-121
9/18/24	**Stains Exam 4**		
9/20/24	XV.	Microorganisms in Pathology • Organism Classification • Anatomic pathology perspectives in histology • Clinical correlations	Carson, p. 210-211 Bancroft, p. 255-277
9/23/24	XVI.	Gram Stain	Carson, p. 212-216 Bancroft, p. 258 Brown, p. 49-56
9/25/24	XVII.	Acid Fast Bacteria Stains	Carson, p. 212-216 Bancroft, p. 260-262 Brown, p. 57-64
9/27/24	XVIII.	H. pylori and Spirochete	Carson, p. 188-190, 218, 226-232 Bancroft, p. 262-266 Brown, p. 65-74, 77-82
9/30/24	XIX.	Fungal Stains	Carson, p. 219-226 Bancroft, p. 266-272 Brown, p. 85-93

STAINING AND IHC LECTURE SCHEDULE

DATE		TOPIC	READING ASSIGNMENT
10/2/24	**Stains Exam 5**		
10/4/24	XX.	Nervous System Structure and Pathology	Carson, p. 192-193 Bancroft, p. 306-320
10/7/24 & 10/9/24	XXI. XXII.	Nerve Stains 1 Nerve Stains 2	Carson, p. 193-208 Bancroft, p. 306-320
10/11/24	XXIII.	Amyloid Structure and Pathology	Carson, p. 158 Bancroft, p. 231-239 Brown, p. 133-134
10/14/24	XXIV.	Amyloid Stains	Carson, p. 158-162 Bancroft, p. 239-249 Brown, p. 135-137
10/16/24	**Stains Exam 6**		
10/18/24	XXV.	Pigment Stains	Carson, p. 234-252 Bancroft, p. 198-228
10/21/24	XXVI.	Hormones and Endocrine System	Handout
10/23/24	XXVII.	Hormones & Carcinogenesis	Handout
10/25/24	**Stains Exam 7**		
10/28/24	XXVIII.	Intro to Enzyme Histochemistry	Carson, p. 282-288 Bancroft, p. 502-504

STAINING AND IHC LECTURE SCHEDULE

DATE		TOPIC	READING ASSIGNMENT
10/30/24	XXIX.	Enzyme Stains	Carson 289-303
10/31/24	XXX.	Electron Microscopy Staining Techniques	Bancroft, p. 441, 448
11/1/24	XXXI.	Cytology Staining	Carson, p. 362-366
11/4/24	**Stains Exam 8**		
11/5/24	XXXII.	Stains Cumulative Review	
11/7/24	**Stains Final Exam**		

Lectures 4-31 all contain the following contents:

- Principle
- Mechanism
- Troubleshooting
- Clinical Correlations

STAINING AND IHC LECTURE SCHEDULE

DATE		TOPIC	READING ASSIGNMENT
IHC PORTION			
9/19/24	I.	Fundamentals of IHC	Carson, p. 254-255 Bancroft, p. 337-340 Brown, p. 139-140
9/24/24	II.	Systems of Detection in IHC	Carson, p. 259-261 Bancroft, p. 340-346
9/26/24	III.	IHC Preparation Methods	Carson, p. 255-258 Bancroft, p. 341-342, 346-350
10/1/24	IV.	Protocol Development in IHC	Carson, p. 261-263 Bancroft, p. 354-362, 373-380
10/3/24	V.	Quality Control and Troubleshooting	Carson, p. 265-271, 274 Bancroft, p. 381-389
10/8/24	**Exam 1 – IHC**		
10/10/24	VI.	Principles of Molecular Pathology	Carson, p. 306-312 Bancroft, p. 395-404
10/15/24	VII.	Diagnostic FISH	Carson, p. 312-313 Bancroft, p. 410-418
10/17/24	VIII.	Fluorescence Staining and ISH Alternatives	Carson, p. 313-315
10/22/24	IX.	Flow Cytometry	Handout
10/24/24	**Exam 2 – IHC**		
10/29/24	X.	Metastatic Carcinoma of Unknown Primary Site	
10/31/24	XI.	CUPs Cytokeratin	
11/5/24	XII.	Supplemental Markers	
11/7/24			

STAINING AND IHC LECTURE SCHEDULE

DATE		TOPIC	READING ASSIGNMENT
	VIII.	Algorithmic Approaches to Histopathology Diagnosis	
11/11/24	**Exam 3 – IHC**		
11/13/24	IX.	Skin IHC	
11/15/24	X.	Breast IHC	
11/18/24	XI.	Common Lymphoma Markers	
11/20/24	XII.	Immunomarkers of the Gastrointestinal Tract	
11/21/24	**Exam 4 – IHC**		
11/22/24	XIII.	Immunohistochemistry Review	
11/25/24	**Final Exam – IHC**		

HT 408 Clinical Laboratory Supervision and Management

OBJECTIVES:

HTL student will at the completion of the lectures and classes, reading assignments, class participation and other assignments on management:
(Measurement will be the attainment of a minimum of 70% on a written or practical exam, unless otherwise stated)

1. Describe the six management functions and relate each to management in the laboratory. List the management functions and define each one in detail.

2. Assess one's own leadership abilities with regard to the qualities presented in class.

3. Evaluate management scenarios given in class, and select the appropriate course of action in managing an employee or other problem.

4. Describe the characteristics of a good manager. Define a good manager and list specific characteristics to include personality types, communication skills, ability to organize, and knowledge of the area.

5. Distinguish effective management attributes from ineffective ones.

6. Describe a minimum of three types of plans, and relate these to managing the clinical laboratory.

7. Describe total quality management and relate it to the management of health care.

8. Prepare a flow chart to analyze the processing of specimens for the RMH Clinical Laboratory. Devise a plan to improve this flow of specimens.

9. Prepare a SWOT Analysis for the implementation of a "Point of Care" testing section for the RMH Laboratory Department.

10. Devise a plan for effective time management by utilizing the skills discussed in class.

11. Draw an organizational chart and define the direct lines of authority and indirect lines of authority.

12. Define organizing as it relates to management.

13. Explain the need for good customer service in health care today.

14. Describe one way to reengineer the process of accepting specimens and processing these specimens at the RMH Laboratory. The new process would result in a decrease in staff and money, thus an improvement to the bottom line.

15. Describe ergonomics and how it relates to computer use.

16. Explain the benefit of effective directing on personnel and productivity.

17. Demonstrate effective verbal communication and describe the need for such a skill in management. (Include the proper use of body language, facial expressions, silence, sounds, etc.)

18. Describe the barriers to effective communication.

19. Relate the need for motivation to effective management.

20. Describe Maslow's hierarchy of human needs, and how an organization fulfills those needs.

21. Relate delegating to directing as it applies to good management.

22. Describe coaching as it relates to effective management.

23. Define controlling as it relates to timely and cost-effective attainment of an organization's goals.

24. Analyze and revise a PFP (Pay for Performance) Standards Form for a position in the RMH Clinical Laboratory (Education Coordinator Position).

25. Describe a quality assurance program and its use in the clinical laboratory.

26. Utilize the PDCA (Plan, Do, Check, Act) cycle. (The Shewhart Cycle devised by Dr. W. Edwards Deming for use in the process of continuous quality improvement).

27. Describe the problem solving steps and utilize these steps to solve a management problem presented in class.

28. Describe the coordinating function of management.

29. Role-play an interview scenario utilizing the acceptable and lawful questions in an interview.

30 Discuss the multi-skilled worker, and the Americans with Disabilities Act (ADA).

31. Relate testing volumes to scheduling for staff.

32. Describe the federal government legislation related to hiring practices, regulation of laboratories, and personnel.

33. Draw an organizational chart showing the federal agencies that relate to health and human services.

34. Discuss registration, licensure, certification, and accreditation as it relates to the clinical laboratory.

35. Describe the test systems according to CLIA '88.

36. Discuss the agencies and associations associated with the clinical laboratory (AABB, AHA, CDC, CAP, COLA, DPH, FDA, HCFA, ISO, JCAHO, NCCLS, NIDA, OSHA, National Technical Information Services.)

37. Describe the government legislation related to medical practice to include Medicare, CLIA, OSHA, Stark I, 1989, Stark II 1993 and PPACA.

38. Utilize financial and accounting terms commonly used in the laboratory fiscal management to include:

- Profit and loss
- Cost/benefit
- Reimbursement requirements
- Materials/inventory management

39. Describe sources of laboratory revenues, and explain the challenges managers face in obtaining these revenues.

40. Define laboratory costs, and describe how each is used in calculating total expense, cost per test, and break-even numbers.

41. Evaluate cost containment strategies.

42. Define the basic principles of evaluation, and describe ways to assess the performance of laboratory personnel and laboratory-related activities.

43. Describe employee competency checks, and devise a competency assessment for a medical laboratory scientist and a histotechnologist.

44. Role-play a successful performance interview from a scenario given in class.

45. Calculate productivity ratios for a clinical laboratory for one month.

46. Describe outcomes management and outcome measures.

47. Define benchmarking and its application to management in the laboratory.

48. Describe laboratory marketing services, customer relations, guest relations, and develop a plan to handle and monitor customer complaints.

49. Describe the process of acquiring a laboratory information system.

50. Evaluate the usefulness of a laboratory information system.

51. Outline an article on the acquisition and evaluation of a laboratory information system, and describe the contents of the article to the rest of the class.

52. Utilize concepts and principles of laboratory operations as they apply to performance improvement.

53. Describe the dynamics of healthcare delivery systems as they affect laboratory service by reading and discussing the following summaries:

- The Health Care Delivery System: A Blueprint for Reform
- Integrated Health Care Delivery Systems' Challenges by Bonnie Boone

54. Describe the dynamics of healthcare delivery systems as they affect laboratory services, healthcare in the US and other countries, and current proposed changes by the Federal Government.

55. Demonstrate how critical pathways can be used in making clinical decisions and in planning for the future.

56. Utilize job descriptions in preparing a PACE form for a RMH employee who works in the lab. Demonstrate how these are used in the annual review process.

57. Define one FTE and calculate an annual salary when given pay per hour.

58. Utilize concepts and principles of motivational theories as they apply to performance improvement.

59. Describe a quality management system for continuously analyzing, improving and reexamining resources, processes and services within an organization.

60. Discuss the total testing process as a comprehensive working model for evaluating the components of the laboratory's quality management plan to include Preanalytical, analytical and post-analytical variables.

61. Discuss quality control as a method for establishing specifications for an analytical process, assessing the procedures, monitoring conformance by statistical analysis, and taking corrective actions to bring the procedures into conformance.

62. Define the essential components of a laboratory safety program

63. Evaluate the program for regulatory compliance

64. Identify hazardous materials and procedures in the laboratory.

HT 408 Clinical Laboratory Supervision and Management

Instructor: **Shana Splawn**

Method of Instruction: **Lecture, discussion, question and answer, role playing, and practice of the various management skills.**

Pre-requisite courses: **Three years of college to include the required courses for entry into the RMH Medical Laboratory Scientist School.**

Instructions: **Complete all weekly canvas assignments.**

Course Goal**: To educate the student in all areas of laboratory management so that they may function as a beginning level scientist/technologist with the projected ease of movement into future management positions in the clinical laboratory.**

Textbook:
Principles of Clinical Laboratory Management, by Jame Hudson, Printice Hall, 2004.

Henry's Clinical Diagnosis and Management by Laboratory Methods, by Richard A McPherson and Matthew R. Pincus. 2017.

Clinical Laboratory Management, by Lynne S. Garcia, 2014.

Other References:

"Management in Laboratory Medicince," by Snyder and Wilkinson, Lippencott-Raven Publishers, 1998.

"Medical Laboratory Management and Supervision," by Varnadoe, F.A. Davis, 1996.

"Total Quality Management in Healthcare," by D.H. Stamatis, McGraw Hill, 1996.

"Reinventing the workplace," by David I, Levine, The Brookings Institution, 1995.

"Selection Process of a LIS," CLMA, 1999, CAP Today, Gary Braley.

Article: "Case Study: Information Systems," by Janet T. Headley, MT(NCA), Advance/ Laboratory, May 2000.

Article: "Ten Steps To Better Time Management," by Rebecca Thimm, Advance/Laboratory, May 2000.

Article: "Charting A Course for Successful LIS Implementation," by Pamela Tarapchak, Advance/Laboratory, May 2000.

Article: "Sifting Through the Data to Find the Best LIS," by Judith A. O'Brien, MLO, Jan. 2001.

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OUTLINE:

LECTURE I 11/6/24

I. Management Process and Managers
- A. Organizational Chart
- B. Management Concepts
  - 1. Management by Objectives
  - 2. Quality Management
- C. The Six Management Functions
- D. Managerial Roles
- E. Styles of Management
- F. Traits of Managers

II. Planning
- A. SWOT Analysis
- B. Components of Planning
- C. Flow Diagram of a Process
- D. Effective Time Management

III. Dynamics of Healthcare Delivery Systems
- A. Effect on Laboratory Service
- B. Systems in the United States

LECTURE II 11/8/24

III. Organizing
- A. Authority and Responsibility
- B. Reengineering a Laboratory Process
- C. Ergonomics
- D. Materials Management
- E. Organizing Activities and Events

IV. Directing
- A. Essential Skills of Directing
  - 1. Communication
    - a. Verbal (Body Language)
- B. Motivating
  - 1. Maslow's Hierarchy of Human Needs
- C. Delegating
- D. Coaching

V. Controlling
- A. Work Standards
- B. Work Measures
- C. Quality Assurance
- D. Plan, Do, Check, Act (PDCA from Dr. W. Edwards Deming)

E. Decision Making and Problem Solving

LECTURE III 11/12/24

VI. Laboratory Information Systems
- A. System Components
- B. Software and Networks
- C. Hardware
  - 1. Hospital Information System
- D. Interface software

VII. The Electronic Medical Record

VIII. The Acquisition and Evaluation of Laboratory Information Systems
- A. Define System Requirements
- B. Request Bids
- C. Demonstrations
- D. Staffing
- E. Implementation
- F. Standard Operating Procedures
- G. Data Security
- H. Data Retention

EXAM 11/14/24

LECTURE IV 11/19/24

IX. Coordinating
- A. CLIA 1988
- B. Multiskilled Workers
- C. Government Legislation Affecting Labs
  - 1. Diversity and the Americans with Disabilities Act
  - 2. Government Regulation and Standards as Applied to Lab Practice
- D. Scheduling and Teams
- E. Critical pathways, PERT and planning techniques
- F. Federal Government Legislation Related to Hiring Practices

X. Total Quality Management and Quality Assurance/Quality Improvement
- A. Basic requirements
- B. Team Building Skills and Uses
  - 1. Continuous Improvement
  - 2. Performance Improvement
- C. Basic tools of TQM
  - 1. Cause and Effect Diagram (fishbone diagram)
  - 2. Dispersion Analysis Diagram
- D. Principles and Practices of Quality Assurance/Quality Improvement
  - 1. Pre-analytical, Analytical, and Post-analytical Components of Laboratory Services
- E. Take Home Assignment

XI. Federal Government Legislation Related to Hiring Practices

LECTURE V 11/21/24

XII. Managing Finances
- A. Basic Financial Management
- B. Profit and Loss
- C. Revenue, Operating Costs, Capital Costs, Cost Management, Cost Analysis
  - 1. Cost Per Test
  - 2. Break Even Analysis
  - 3. Cost Accounting and Cost Containment
  - 4. Reimbursement Requirements
  - 5. Materials and Inventory Management

XIII. Evaluating and Personnel Management
- A. Basic Principles of Evaluation
- B. Personnel Evaluation and Human Resource Management
  - 1. Performance Standard/Evaluation
    - a. Utilization of Personnel
    - b. Analysis of Workflow and Staffing Patterns
  - 2. Competence Assessment
  - 3. Performance Appraisals (PFP) and Position Description
  - 4. Performance Interview
- C. Evaluation of Activities
  - 1. Laboratory Productivity Measures
  - 2. Outcomes Management

XIV. Benchmarking

XV. Marketing Services
- A. Customer Service, Guest Relations

XVI. Clinical Decision Making

XVII. Dynamics of Healthcare Delivery Systems
- A. Affect on Laboratory Service
- B. Healthcare Delivery in US versus Other Countries
- C. Current Changes Proposed by Federal Government

LECTURE VI 12/2/24

XVIII. Quality Management
- A. Analyzing, Improving, reexamining resources, processes and services

XIX. Quality Assessment
- A. Total Quality Plan
- B. Total Testing Process
  - 1. 3 Phases
    - a. Preanalytical
    - b. Analytical
    - c. Post analytical

XX. Quality Improvement Tools
- A. Q-Probes
- B. Q-Tracks
- C. Quality Control
  - a. Deviation
    - i. Systemic
    - ii. Random

b. Frequency
D. Levey-Jennings Charts
a. Westgard Rules
E. External QC (Proficiency Testing)

XXI. Quality Management of Post analytical Processes
A. Time Sensitive
B. Test Selection & Implementation
a. Waived
b. Non-waived

XXII. Current Regulations
A. Four Horsemen
a. CLIA '88
i. FDA
ii. CMS
iii. CDC
b. HIPPA
c. OSHA
d. Stark
B. Long-Term Effects: Legislation, Regulation, Accreditation
C. Healthcare Reform
a. PPACA
b. Current Trends and Issues with Healthcare Reform

LECTURE VII 11/3/24

XXIII. Safety Management Plan & Responsibilities
A. Standard Precautions
B. PPE
C. Engineering
D. Design
E. Vaccination
F.Hazardous waste
G. Safety Devices

XXIV. Laboratory Hazards
A. Biological
a. Transmission
b. LAIs
B. Chemical
a. Classification
b. Exposure
C. Physical
D. Radiological
a. Risk
i. Time
ii. Distance
iii. Shielding

XXV. Standard Precautions
A. OSHA

XXVI. Hazard Prevention and Containment
A. Risk Assessment

a. Exposure Control Plan
b. WHO
c. CDC/NIH
d. Biosafety Lab

B. Handwashing
C. Barrier Protection
D. Engineering Controls
E. Chemical Fume Hoods
F. Biological Safety Cabinets
G. Sterilization and Decontamination
a. Germicides
b. Disinfectant
c. Sterilization

XXVII. Spill Management

LECTURE VIII 11/4/24

XXVIII. Metric System
A. Mass
B. Length
C. Volume
D. Conversions

XXIX. Aqueous Solutions
XXX. Molarity
XXXI. Normality
XXXII. Molality
XXXIII. Dilutions
A. Clinical Application
B. Dilution Series
a. Independent
b. Serial
i. Four fold Serial Dilutions

Final EXAM 11/5/24

Sentara RMH Histotechnology Schools
HT 409 Education and Research

OBJECTIVES:

HTL student will at the completion of the HT 409 Education and Research course, reading assignments, and practice in class giving a lecture with a minimum of 70% accuracy on a written or oral exam:

1. Define competencies and curriculum, and write behavioral objectives. Explain how all these and learning are interrelated to develop a curriculum.

2. List the qualities of a good teacher. Discuss how the teacher is a facilitator.

3. Explain the results of research as it applies to student expectations of a course.

4. Utilize competency-based education and task analysis as it relates to observation of performance and conversion of this into objectives and competencies.

5. List the responsibilities of a good teacher.

6. Write a behavioral objective for information given in class.

7. List the benefits of objectives for students.

8. List and define the three learning domains of Bloom to include cognitive, affective, and psychomotor.

9. Write objectives in the three learning categories utilized on the Board of Certification Exam to include recall, application, and problem solving.

10. Explain the six levels of learning in the Cognitive domain and correlate with the certification exam modified levels of three instead of six. Explain and write test questions at each level utilized in the certification exams.

11. List the levels in the Affective domain and explain how one progresses up the domain.

12. List the three levels of learning in the psychomotor domain.

13. Demonstrate a working knowledge of role playing by performing a scene in class from a pre-determined clinical setting. Explain how role playing can be used in an educational setting.

14. List the advantages and disadvantages of the various teaching techniques to include lecture, question and answer, discussion, role playing, demonstration, and doing.

15. List the advantages and disadvantages of computer-assisted instruction.

16. Write a description of teaching using the Internet and give advantages of this method.

17. List and write examples of the different types of evaluation to include multiple choice, essay, short answer, and matching. Explain which methods of evaluation are subjective or objective. Define subjective as compared with objective as it applies to test questions.

18. Write a lecture or teaching module complete with objectives, outline, and evaluation mechanisms.

19. Evaluate published studies as an informed consumer.

20. List the steps in the research process.

21. Explain the factors to consider when writing for publication in the clinical laboratory sciences.

22. Describe the use of statistics, both descriptive and inferential, with regard to research practice.

23. Identify the purpose of various types of research.

24. Give a five minute presentation to the class demonstrating good eye contact, speaking ability, and write objectives, competencies and test questions on this presentation. Correlate the objectives, competencies, and test questions for this presentation.

25. Discuss correlation coefficient and define the meaning of different numerical values.

26. Describe the different types of tests to include Norm-referenced and Criterion-referenced.

27. Identify the group of people that investigates research articles for publication.

28. Identify the general areas/Standards required by NAACLS to be included as part of the curriculum for a BS degree level such as HTL.

30. Identify goals and compare them with objectives for a course of instruction.

31. Discuss the use of criticism in instruction.

Sentara RMH HEALTHCARE

HTL School

Education HT 409 (Research Included)

Lecture I 11/1/24

I. *The Education Process*

A. Learning
B. The Teacher as a Facilitator
C. Qualities of a Teacher
    1. Student expectations of a course
    2. Teacher responsibilities
D. Behavioral Objectives (Educational Map)
    1. Competency-Based Education
    2. Task Analysis
    3. Benefits of objectives for students
    4. How to write an objective
E. Professional Competency: Hierarchical Domains
    1. Cognitive Domain
        a. Bloom vs. Board of Registry
    2. Affective Domain
        a. Attitudes
    3. Psychomotor Domain
        a. Hand to Eye coordination
F. Questions to answer and one problem to solve

II. *Research Design/Practice*

A. Introduction to Research: Process and Plan; Problem and Hypothesis
B. Writing a Proposal
C. IRB Process
D. External and Internal Validity
E. Research Design: Experimental & Quasi-experimental
F. Data Collection/Measurements & Instrumentation
G. Use of Statistics: Descriptive and Inferential
H. Selection and Interpretation of Statistical Tests
I. Dissemination and Critical Evaluation of Research
J. Writing for Publication in the Clinical Laboratory Sciences

Lecture II 11/4/24

I. *Teaching Methods*

A. Lecture
1. Advantages and disadvantages (Handout)
B. Discussion
C. Teaching Via Electronic Media
1. CAI—Computer Assisted Instruction
2. Teaching Using the Internet
a. Communication with patients
b. Drug searches
c. Disease states
D. Role Playing
E. Demonstrations
"A well-prepared demonstration is worth a million words."
F. Videos & Tapes
G. Distance Learning

II. *Types of Testing*

A. Objective vs. Subjective

1. Essay tests
2. Matching
3. Multiple choice
4. Short answer

III. Research
A. Statistical significance in a research study
1. "Effect Size"
B. Inferential Statistical Tests
C. Communications of research results
D. Collection Qualitative Data
1. Coding Qualitative Data
E. Publication Format
F. Evaluation of research papers

Class III Student Presentation:Submit on Canvas

- Each student will give a 5 minute presentation to the class
  - Grading:
    - Overall presentation 10 points
    - Completeness of outline 5 points
    - Correctness of objectives 20 points
    - Objective correlation with test 20 points
    - Objectivity of test questions 20 points
    - Overall correlation (obj. test etc.) 25 points

  The topic must relate to laboratory medicine, but should be of special interest to you. You select your own topic.

  Total…….100 points

Class IV Final Exam—11/6/24