

Student Handbook 2011

KU Cytotechnology Program

**University of Kansas
Medical Center**



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KU Cytotechnology Program Student Handbook

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**Course Outline
11-12**

Week	Topic (weeks)	Instructor	Readings	Course #
1-4 8/22 – 9/16	Fundament. of Analytical Tech. (4) Meets Thurs., 9-12 and 12:30 – 1:30	Jones, Hudzicki	As ass.	CYTO 523 (1)
1 8/22 – 8/26	The microscope, Class. Systems (1) Intro. to Cytology, Lab Orientation, Safety, Med. Terms	MM	Chpt. 1,2,4 p. 62-63, 147-158 D B Intro. Intro. PT	CYTO 300 (5)
2-3 8/29 – 9/9	Cytology Terminology(2) Anatomy, Histology, Normal Adequacy, Hormonal, Benign Proliferative	MM	p. 64-74 D p. 11-28,109-116 PT 236-241 PT B Chpt. 1,3	"
4-5 9/12 – 9/23	Infl./Repair (2) PG (12/13)	CR	B Chpt. 2 Ch. 5, p. 85-90, 109-118, 133-136 D p. 89-108, Chpt. 4 PT	"
6-7 9/26 – 10/7	Dysplasia (2)	MM	B Chpt. 3,5 p. 74-79, 90-97 D p. 28-36, 49-52, 241-244 PT	CYTO 321 (5)
8 10/10 – 10/14	CIS (1)	MM	p. 69-88 PT p. 76 D B Chpt. 5	"
9-10 10/17-10/28	CA CX (2)	MM	p. 37-48, 55-59 PT p. 80-85, 97-109 D B Chpt. 5	"
11-12 10/31-11/11	Uterine Corpus (2)	MM	p. 119-152 PT p. 120-133 D B Chpt. 6	CYTO 322 (6)
13 11/14 – 11/18	ASCUS (1)	MM	p. 94-97 D B. Chpt. 4 p. 59-66 PT	"
14-16 11/21-12/9	Radiation Effect, Metastatic Dis., Vulva, Vagina, Ovary (3)	MM	Chpt.3, 5,p. 244-247 PT p. 118-120, 136-147 D B Chpt. 7	"
17 12/12-12/16	Review (1) FGT FINAL EXAM 12/16/11	MM	D as assigned B Chpt. 9-11 p. 195-201, 221-234 PT	"
HOLIDAY				
12/17/11 – 1/2/12				
Days off: Labor day, 9/5; Veterans Day 11/11; Thanksgiving 11/23-11/25, Xmas 12/17 – 1/2/12 (return 1/3)				
19 1/3 -1/6	Lab. Mngt., QC	MM	28,30,32,33 GM	CYTO355 (4)

Week	Topic	Instructor	Readings	Course #
20-22 1/9 – 1/27	Resp./ Oral (3)	MM	7,21,22 D	"
23 1/30 – 2/3	Reticuloendothelial Malignancy (1) (omit rotations)	MM	18 D	CYTO 370 (3)
24-25 2/6 – 2/17	Effusions (2)	MM	8 D	"
26 2/20 – 2/24	CSF (1) (Omit rotations)	MM	11,29 D	"
27-28 2/27 - 3/9	GI (2)	MM	9 D	CYTO 380 (6)
29-30 3/12 - 3/23	Breast (2)	MM	19 D	"
31-32 3/26 - 4/6	GU (2)	MM	10 D	"
33-36 4/9 - 5/4	FNA (4) Liver, Pancreas, Bone Thyroid, Salivary, Head & Neck	MM	12, 13, 15-17, 23, 24 D	"
37 5/7 - 5/11	Review (1) NON-GYN FINAL 5/11	MM	As assigned	"
Recognition ceremony 5/12/12				
Break 5/13-5/28				
38 - 41 5/29 - 6/22	Stats, /Scientific Method (4)	MM	1-2 Prac. R. CY 415/420 (1/2) Readings as assign. 3 D	
42-44 6/25 - 7/13	Review Paper, Interest. Case (3)	MM		"
6/6 – 6/29	Intro. to Mol. Dx.	EE	As assigned	CLS 605 (1)
6/6 – 6/29	Intro. to Mol. Dx. Lab	EE	As assigned	CLS 607 (1)
7/2 – 7/27 622 (2)	Problems in Molecular Dx.	EE	As assigned	CLS
45 450 (2) 7/16-7/20/12	Review (1) FINAL FINAL 7/20/12	MM	As assigned	CYTO
CLS 622 final due 7/27/12				

NOTE: Students are not eligible to take the registry exam until 7/28/2012 or later.

Days Off: MLK-1/16, NO spring break like KU campus, semester break – 5/13-5/28, Mem. Day -5/28, 4th July, Program ends 7/27/12. Note: 2nd edition of DeMay (Art and Science) may have slightly different page numbering than what is given above. Students will be notified of changes from the above.

Readings:

- GM = A Manual of Cytotechnology, 7th ed., Keebler, C. (Green Manual) on reserve
- D = The Art and Science of Cytopathology, DeMay, R., (DeMay)
- B = The Bethesda Classification System, Kurman, R. (Bethesda)
- MD = Molecular Diagnostics (Biotechnology Text)
- PT = The Pap Test (Pap)

Note: Especially in DeMay, students should note the photographs at the end of the chapter which corresponds to the pages read.

ACCREDITATION STATEMENT

The Cytotechnology Program is accredited by:

Commission on Accreditation for Allied Health Education Professions (CAAHEP)

1361 Park Street
Clearwater, FL 33756

Phone: 727-210-2350

FAX: 727-210-2354

Sponsoring Organization

American Society of Cytopathology

400 W. 9th St, Suite 201
Wilmington, DE 19801

Phone: 302-429-8802

FAX: 302-429-8807

Mission Statement of the University of Kansas Medical Center

This document can be found at the following website:

<http://www.kumc.edu/about-us.html>

Mission Statement of the KU School of Health Professions

“To serve the citizens of Kansas, the region, the nation and to develop tomorrow’s leaders through exemplary education, research, and service.”

Mission Statement of the KU Cytotechnology Program

Our Mission is to excel in the education of cytotechnologists who will meet the needs of the State of Kansas, the region, and the nation by preparing graduates who are accurate in cytologic interpretation, skillful in cytologic laboratory techniques and operations, and knowledgeable about both traditional and ancillary cytologic methods. In addition, the program will develop leaders who practice professionalism and contribute to education, research, and service in cytopathology while providing the highest quality of patient care.

GOALS AND LEARNING DOMAINS FOR THE PROGRAM:

Minimum expectations:

To prepare competent entry-level cytotechnologists in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.

Screening and Interpretation

(Cognitive) (Psychomotor) (Affective)

To prepare entry-level cytotechnologists to examine conventional and liquid based gynecologic specimens to detect and identify negative, benign, pre-malignant and malignant conditions.

To prepare entry-level cytotechnologists to examine non-gynecologic specimens including fine needle aspirations and detect and identify negative, benign, pre-malignant, and malignant conditions.

To prepare entry-level cytotechnologists who can maintain high degrees of accuracy combined with productivity. At a minimum, the entry-level cytotechnologist should be able to accurately evaluate 5 slides an hour.

To prepare entry-level cytotechnologists who will meet the other entry-level competencies as defined in the 2004 Standards and Guidelines for the Accreditation of Educational Programs in Cytotechnology.

Basic Laboratory Techniques

(Cognitive) (Psychomotor) (Affective)

To prepare entry-level cytotechnologists in basic cytotechnology laboratory skills including specimen handling, quality controls, troubleshooting, use of the microscope, and staining.

Laboratory Operations

(Cognitive) (Psychomotor) (Affective)

To prepare cytotechnologists to participate in quality control and quality assurance measures and safety regulations within the laboratory.

Ancillary Testing/New Technologies

(Cognitive) (Psychomotor) (Affective)

To be able to explain new technologies as defined by the Standards as they are applied to the cytopathologic diagnostic process.

Scientific Method of Inquiry

(Cognitive) (Psychomotor) (Affective)

To be able to read and evaluate scientific cytopathologic literature and to explain the scientific method.

Professional Development

(Cognitive) (Psychomotor) (Affective)

To prepare the entry-level cytotechnologist to participate in continuing education and appreciate the role of the profession in patient management and health

**Faculty and Support Personnel of the
KU Cytotechnology Program**

Program Medical Director	Fan Fang, Ph.D., M.D.
Program Director	Marilee Means, Ph.D., SCT(ASCP)
Medical Director of the Cytology Lab	Fang Fan, Ph.D., M.D.
Adjunct Faculty	Sue Dillon, BS, SCT(ASCP) Courtney Robinson, BS, CT(ASCP) Shellie Vadnais, BS, CT(ASCP) Heather Gallagher-Nelson, BS, CT(ASCP) Cytology Lab Supervisor
Clinical Site Instructors	Kathy Goudy, BS, CT(ASCP) Physician's Reference Laboratory Audrey Lammers, CT(ASCP) Truman Medical Center Jeff Wilson, BS, CT(ASCP), HT(ASCP) MAWD Laboratory, Inc.
Cytology Technician	Jessica Plowman
Cytology Technician	Ophelia Costello

Student Guidance Policy

During the orientation, the instructor shall review each page of the Student Handbook with the students in order to clarify any portions which may be unclear and to confirm the students' understanding of the contents. The students will sign that they have read, understood, and agree to abide by the policies and procedures of the handbook.

In case of student academic difficulty, as stated in the School of Health Professions handbook, it is the student's responsibility to keep track of their grades during the semester and to seek appropriate assistance, if needed. The faculty are always available for assistance. The instructor will periodically advise the students of their ongoing progress using the Student conference Sheet. In the case of academic probation, a faculty member is assigned to the student in difficulty to assist them in returning to acceptable performance within the specified time frame.

In the case in which a student may need additional educational assistance or psychological counseling, the student may obtain a referral from any of the faculty, or may set up their own appointments with the student service, as outlined in the student services brochure. In any case, this counseling is strictly private and confidential, and is provided free of charge.

School Policies

Policies and procedures detailed in the School of Health Professions Student Handbook apply to all students in the KU Cytotechnology program. Please review the handbook carefully. It is available online from the school's Web site:

<http://healthprofessions.kumc.edu/school/students/student-handbook.html>

POLICIES AND PROCEDURES FOR KU CYTOTECHNOLOGY STUDENTS

Welcome to the Cytotechnology Program at the University of Kansas Medical Center! The next year will be spent in making the transition from a college student to a fully qualified health care professional. This transition is accomplished in part by mastering the multiple concepts and microscopic visual criteria of various disease processes and body sites. This in itself will demand a great deal of your time and study. But you will also need to master the more abstract skills involved in being a professional. These include a concern for the quality of patient care above all else, a valuing of ethical behavior, and the competency and courtesy expected of a member of the health care team. These behaviors may or may not come easily for you but they need to be learned as surely as the criteria for cancer. Thus, this handbook is designed to help you make this transition and to inform you of important policies and to be aware of all of the material in this manual and to ask questions if you do not understand any part of it.

The rules and regulations of the University of Kansas pertaining to academic work are published in the “Rules and Regulations of the University Senate” and the “Faculty Senate Rules and Regulations” as provided for by the “All University Senate Code”. Copies of these documents are on file in the Dean’s Office and online at <https://documents.ku.edu/policies/governance/UniversitySenateCode.htm> and <https://documents.ku.edu/policies/governance/USRR.htm>. A summary of these is published in the current University of Kansas Undergraduate Catalog. Specific Academic Standards and Student Policies in the Cytotechnology Program are included later in this handbook. Student wishing further information about regulations applicable to studies in their school should consult the Program Director or the Dean’s Office in the School of Health Professions.

The thirty-nine hours of credit offered in the Cytotechnology Program at the University of Kansas Medical Center provide an opportunity for the student to acquire a high level of competence in the practice of Cytotechnology. Whereas, in the student’s previous college courses, the student was primarily concerned with the memorization of the course material and the acquisition of a respectable grade, the Cytotechnology student must, in addition, develop psychomotor and problem solving skills. The ability to develop a high degree of visual perceptiveness is also critical to success. The courses demand time and effort, high standards of accuracy and precision, patience, and concentration.

Assessment of competency is measured by a national certifying examination, the successful completion of which is recommended for employment and to assure the patient and health care providers the highest quality of laboratory service. Eligibility for the certifying exam entails successful completion of the program and the attainment of a bachelor’s degree. Any student holding an incomplete grade or a grade lower than B cannot be considered as having met the requirements. An exception to the “B” rule is made for the molecular courses CLS 605, 607, and 622 and CYTO 523 which is taught by instructors in the CLS department. The lowest acceptable grade in these courses is a “C”.

The objectives for each course, which shall provide the basis for the evaluation of student performance for each unit, are included in this handbook.

KU CYTOTECHNOLOGY PROGRAM POLICIES, ACADEMIC STANDARDS, AND GRIEVANCE PROCEDURES

DEPARTMENTAL POLICIES

A. ACADEMIC STANDARDS AND STANDING

Academic Standing for continuation and/or satisfactory completion of the program is as follows:

Students in good standing **MUST** adhere to all four of the following standards:

1. They must maintain an 80% average score in their written and practical examinations for each course.
2. They must maintain an 85% (Fall semester) or 90% (Spring and Summer semester) score in their daily screening scores. (These shall be computed as needed for computation of course grades).
3. They must obtain an 80% averaged score on the cumulative examination for the semester.
4. Each course must be passed with a grade of B or above.

Failure to achieve any one of these standards is failure to maintain good standing and may lead to probationary status and/or dismissal from the program. All prior courses must be passed to the satisfaction of the instructor(s) before the student will be allowed to continue in the program. Thus, due to the consecutive nature of the courses, it is possible that a student may fail the program mid-semester. **THE STUDENT IS HEREBY NOTIFIED THAT THIS POSSIBILITY EXISTS AND THAT THE FINANCIAL CONSEQUENCES OF THIS FAILURE (i.e. possible loss of tuition, etc.) ARE THE SOLE RESPONSIBILITY OF THE STUDENT. THE POLICIES OF THE UNIVERSITY OF KANSAS MEDICAL CENTER OFFICE OF STUDENT RECORDS AND REGISTRATION WILL DETERMINE WHETHER A TUITION REFUND WILL BE ALLOWED.**

The grading scale used for written and practical examinations is as follows:

A	90-100
B	80-89
Unsatisfactory	<80

The grading scale for daily screening scores for each semester is as follows:

	Fall	Spring/Summer
Superior	92-100	95-100
Good	85-92	90-94
Unsatisfactory	<85	<90

For the purpose of assigning a letter grade in each of the courses, the following scale will be used:

A	90-100
B	80-89
C	75-80
D	70-74
F	<70

If the student's status is placed in jeopardy by failing to adhere to the above academic standards, the policies of the School of Health Professions will be followed. (See page 13, this Handbook). The student will be notified in writing that his/her status is in jeopardy. This notification will take place within five (5) working days from the time the Department first becomes aware of the circumstances. Should this notification be necessary, the department will appoint an appropriate faculty advisor to be available to assist a student who is notified of jeopardized status.

This official written notification shall include the following information:

- A. the reason the student is being so notified
- B. the potential consequences of the circumstances
- C. the time frame in which the student may attempt to rectify the situation
- D. the steps necessary to rectify the situation
- E. the name of the faculty advisor appointed to assist the student
- F. the consequences of the successful or unsuccessful attempt to resolve the matter in the specified time frame

*At the discretion of the department, an extension may be granted. Documentation of this arrangement must be attached to the original notification.

If the student's academic standing is jeopardized due to failure to achieve an 80% average on written and practical unit tests, the following procedure shall be followed. At the end of the course, the student has five working days to attempt to rectify the problem by retaking unit test(s) in which a score of 80 or less was obtained. No more than 2 unit tests per course may be retaken. Each individual test in a unit (glass slide, kodachrome, or written) shall count as one test. The repeat test score will be averaged with the old test score to determine the new unit test score.* These new scores will then be averaged according to the formulae presented for each course. If the student successfully raises their unit test average grade to 80% or above, then the student will be returned to good standing. If, however, the student fails to raise their unit test average grade to 80%, the student may not continue in the program and is dismissed. Under exceptional circumstances, at the sole discretion of the faculty, an extension of probationary status may be allowed. In such a case, the student will receive written notification of the length of time allowed before reevaluation.

If the student's academic standing is jeopardized due to failure to achieve an 85% screening score in the Fall semester or a 90% screening score in the Spring or Summer semester, the following procedure shall be followed. At the end of each month, or sooner if the grade is needed to compute a course grade, the student's daily screening grade will be computed. If the student fails to meet the above standards, then the grade for the course be allowed one month to improve the daily screening score to the necessary level. If the student does not improve the screening score to the necessary level, then an incomplete (I) will be assigned to the course and the student will be dismissed from the program. If the student does improve the score to the necessary level, then the grade for the course will be computed and the student will be restored to good standing. It may occur that this grade is less than a B. If so, an exception to standard #4 will be allowed, with the consent of the faculty. Under exceptional circumstances, at the sole discretion of the faculty, an extension of probationary status may be allowed. In such a case, the student will receive written notification of the length of time allowed before reevaluation.

If the screening score is jeopardizing the last course of a semester (CYTO 322, CYTO 380, or CYTO 450) special arrangements for making up the screening scores may need to be made. The student shall have the choice of attending during the break period following each semester or of shortening the time period during which he or she may attempt to improve the scores to the necessary level. In either case, the student may not pay fees for the following semester until his or her status in the current semester is known. The student's screening score will be computed prior to the last day in which the student may enroll by paying late fees. If the student is allowed to enroll after raising his or her screening score to the necessary level, the payment of any penalty or late fee is the responsibility of the student. If, however, the student does not raise the screening score to the necessary level, then the student is dismissed from the program and will not be allowed to enroll in the following semester or continue in the program.

If a student does not make an 80% average on a cumulative final examination, then the student's status is jeopardized. If the student wishes to retake up to two portions of the cumulative final, then they must do so within five working days of notification of their test results and the written notification of jeopardized status. If the student desires to attempt a retake of the exam, then he or she must notify the program director by phone or in person within 24 hours of their notification of test results. The retake scores will be averaged with the original test scores and the resultant score will be used in computing the results of the cumulative examination. The student may not pay fees for the following semester until the results of the retake examination is known. If this results in any penalty or late fees. These are the responsibility of the student. If the student raises the cumulative final examination score to 80% or above, then the student is returned to good standing and may enroll. If, however, the retake averaged score is lower than 80%, then the student is dismissed from the program and may not enroll in the subsequent semester. If a student makes a score lower than a B in any course, then the student's status is jeopardized. The student may utilize one or more of the above procedures in an attempt to rectify the component(s) of the course in which his or her progress is not satisfactory.

B. ATTENDANCE

Students in the Cytotechnology Program should become thoroughly knowledgeable with each course and professional criterion in preparing for a career in the cytotechnology laboratory. Class attendance is required because the material presented is essential for the development of the student in this professional discipline. Assignments require actual performance of procedures and/or application of principles. The manner or method of performance needs reinforcement. All assignments and course objectives must be completed to the satisfaction of the instructor.

Students are expected to attend all meetings of their classes and rotations. If a student must be absent because of illness or extenuating circumstances, he or she should notify the cytotechnology office as soon as possible (588-1179) and should state which class periods will be missed. If on rotation, the rotation site should ALSO be notified. Provision for make-up is at the discretion of the instructor. Appeals for special consideration may be addressed to the instructor involved and, if the appeal is not resolved, to the educational coordinator.

A student having excessive absences may be withdrawn from the course and assigned a grade of F. In the Cytotechnology Program, excessive absence is defined as absence in excess of 5 days in the Fall or Spring semesters and 3 in the Summer semester. Students will not be considered to have successfully completed the semester with excessive absences and will be subject to dismissal. Additionally, being tardy (more than 10 minutes late, i.e. after 8:10 a.m.) 3 times will be considered equivalent to one day's absence.

In the Spring and Summer semesters only, accommodation for the purpose of interviewing for future employment will be made with a total of no more than 3 days allowed for this purpose.

C. DRESS CODE

A measure of a student's professional development is their choice of appropriate clothing and appearance. Men and women students should dress in an appropriate manner. All students must practice personal hygiene and must dress in a manner that insures their health and safety. Sandals, plunging necklines, overly short or tight skirts or dresses, or overly tight shirts, slacks, or jeans are all unprofessional in appearance. A rule of thumb is, if in doubt, wear something else.

In the processing laboratory, scrubs are provided for use. Cloth lab coats may be worn over street clothes but appropriate personal protective equipment must also be worn as outlined in the infection control policies of the laboratory. Students should wear low-heeled close-toed shoes for laboratory work. High heels and open toed shoes are both unsafe and inappropriate for the setting. Failure to abide by appropriate standards of dress may result in disciplinary action.

D. BEHAVIORAL AND SOCIAL ATTRIBUTES

Confirmation to professional standards of conduct for cytotechnologists are components that demonstrate proficiency and permit graduation from the program. The student is expected to demonstrate a professional attitude of respect for the individual and courtesy in communications with patients, health professionals, faculty, staff, and other students. The development of patience, cooperation, tolerance for others, and the ability to receive constructive criticism in an open manner are social attributes which will aid the student as a professional. Strict adherence to issues such as patient confidentiality are required and failure to maintain high ethical standards may result in disciplinary action up to and including dismissal.

Additionally, students will be evaluated towards the end of the Fall semester, based on the entire semester's performance, on their Professional Development in the areas of Cooperativeness, Work Habits, Communication Skills, Responsibility, Interpersonal Relationships, and Honesty. This evaluation and recommendations for improvement will be discussed with the student, will contribute 10% to their final course grade in the semester (CYTO 322), and will remain as a part of the student's permanent file in the program. See Professional Development Form in this handbook.

The student is expected to know and understand the infection control policies established by the laboratory and to abide by them. The student is also expected to abide by the chemical safety standards of the laboratory by adhering to proper disposal of hazardous waste, etc. Failure to do so may result in disciplinary action. Students must successfully complete safety training and training in HIPAA prior to beginning their studies.

E. MOTOR SKILLS

The student needs to be sufficiently adept to adequately perform manual skills such as coverslipping, adjusting the fine focus of a microscope, and dotting glass slides. The student must also be mobile enough to attend to the various tasks in the processing and screening laboratories.

F. COMMUNICATION SKILLS

The student must be able to communicate clearly in English using both verbal and written skills. Students for whom English is a second language must attain a score of 570 or more on the TOEFL examination. The Applied English Center is responsible for determining the English proficiency level for all non-native speakers of English. Students for whom English is a second language must be evaluated by the Applied English Center in the spring prior to their enrollment at the Medical Center. Notification of the results of the evaluation must be given to the Program Director by March 1 of the year in which the student wishes to apply.

It is expected that students will strive for a professional level of courteous, respectful communication with all those with whom they come in contact. Failure to do so may result in disciplinary action.

G. DISABILITIES

Visual acuity is a necessity for the program. Although color-blindness is not an automatic barrier to adequate performance, nevertheless, a great deal of additional meaning may be gained by looking at the shades and hues of stained material on a slide, and a student contemplating a career in the field would do well to keep this fact in mind. Other disabilities would need to be evaluated on a case by case basis, following the University's guidelines.

Accommodation Policy: It is the policy of the University of Kansas Medical Center to provide reasonable accommodation to qualified individuals with known impairments that meet the statutory definition of a covered disability except where such accommodation would impose an undue hardship or present the threat of harm. Reasonable accommodation applies to all aspects of employment and all educational programs, services and activities. Persons with disabilities who are covered under this policy include students who satisfy eligibility criteria; and, with or without reasonable accommodation, meet the technical standards and matriculation requirements of the program.

Procedure for requesting accommodation: Students with documented disabilities who are enrolled at the University should direct their request for accommodation to:

Carol Wagner, EO/Disability Specialist
Equal Opportunity Office
1040 Wescoe
Telephone: (913) 588-1206
TDD: (913) 588-7963

H. HEALTH

The students must maintain physical, emotional, and mental health which will permit them to meet the course and program objectives. The policies of the University of Kansas Medical Center Student Guidelines Regarding Infectious Diseases shall be in effect for students within the program. All students within the program are required by the University's policy to have been immunized with Hepatitis B vaccine. Along with a medical examination prior to entry into the program, students are required to submit the results of a color-blindness examination.

I. COURSE OF STUDY

The program is twelve months long. Students attend from 8:00 a.m. to 4:30 p.m., Monday through Friday. Holidays are the same as the laboratory with the addition of a

Christmas break and a semester break in May. The first portion of the course covers gynecologic cytology. The second portion covers non-gynecologic cytology including respiratory specimens, gastric specimens, breast specimens, spinal fluid, and effusions as well as FNA specimens.

J. LABORATORY ROTATION

Students are expected to rotate through the processing laboratory and perform both gynecologic and non-gynecologic processing in order to meet the expectations for the course. It is expected that the students will give their full attention to these critical tasks when assigned as they are both an important part of their education, and more importantly, quality patient care depends on their accuracy and precision. This component of student performance will be evaluated and will comprise a portion of the evaluation in their Professional Development.

K. SCREENING

The clinical portion of the academic training includes the screening of both gynecologic and non-gynecologic slides. In order for the students to obtain the maximum benefit from this training, and for the program to accurately evaluate the student's progress towards the goal of accurate and productive screening rates, the following rules apply.

1. You should screen an appropriate "mix" of the types of slides available at each site. At KU this would mean approximately 80% Thin Prep slides and 20% conventional slides. No more than 1/2 of the points available each day will be non-gynecologic slides. At PRL, Truman, and MAWD ask the site instructor what the appropriate mix of slides should be.
2. Sensitivity (detecting an abnormality when one does exist) should be 85% (not including ASCUS) for the Fall semester and 90% (including ASCUS) for the Spring and Summer semester.
3. "Extra" slides may be completed after the screening quota is reached but will not count towards goals nor "cancel out" previous misses.
4. Students must be scrupulous about starting screening at the correct time and handing in slides in for grading (no reviewing outside of screening period) at the end of screening time.
5. Students' grades from the previous month will be computed and no student will be allowed to complete screening early and leave the department if their previous month's score was below minimum levels of performance. If needed, use the extra time to review the slides and double check your diagnoses before you hand them in.
6. Failure to meet any of the above standards on a monthly basis will result in the reduction of the screening component of the grade by 10%.

Monthly expected screening totals:

Oct.	150	March	550
Nov.	200	April	650
Dec.	100	May	360
Jan.	375	June	800
Feb.	450	July	350

Sensitivity: Percentage of abnormal cases interpreted as abnormal (even if the interpretation did not exactly match the final diagnosis)

Number of abnormal cases = _____

Number of false negatives = _____

Number of cases interpreted as abnormal = _____

Sensitivity = $\frac{\text{\# of cases interpreted as abnormal}}{\text{Total abnormal cases}}$ = _____%

Students must attain a minimum of 85% sensitivity in the Fall and 90% sensitivity in the Spring and Summer in order to pass the course.

L. ACADEMIC/NON-ACADEMIC MISCONDUCT

Each department has rules regarding academic and nonacademic misconduct. Students have the responsibility to know these rules. In addition to department rules, the School of Health Professions has its own rules regarding academic and nonacademic misconduct. (See Appendix 1, page 7-9).

I. Academic misconduct is defined as:

- a. Giving, receiving, or utilizing unauthorized aid on examinations, assignments, projects, and/or other undertakings.
- b. Misrepresenting the source of academic work.
- c. During clinical education, placing a patient in needless jeopardy by acting or performing inappropriately.
- d. During clinical education, any breach or violation of the confidence of a patient.
- e. Unethical practices in conducting and/or reporting research.

Failure to abide by regulations or acts of academic misconduct may result in admonition, warning, or censure, and in addition, may subject the student to reduction of grade, disciplinary probation, suspension, or expulsion.

II. Non-Academic Misconduct

Students are expected to conduct themselves as responsible and professional members of the University community. Non-academic misconduct includes any violation of the University policy on prevention of alcohol abuse and drug use on campus and in the workplace as well as any other published University policies applicable to allied health students. While on University premises or at University sponsored or supervised events, students and organizations are subject to disciplinary action for violations of published policies, rules, and regulations of the University and

Regents, and for the offenses in the School of Health Professions Student Handbook under Nonacademic Misconduct (Appendix 1, p. 7-9).

In addition, the student is expected to conform to professional standards of conduct for cytotechnologists by:

1. demonstrating an attitude of respect for the individual and courtesy in communications with patients, health professionals, faculty, staff and other students.
2. demonstrating patience, cooperation, tolerance for others, and the ability to receive constructive criticism in an open manner.
3. strict adherence to patient confidentiality and other ethical standards.
4. strict adherence to the safety and infection control policies of the laboratory.

Failure to abide by these standards, in addition to any violation of the academic and nonacademic offenses listed in the SHP handbook, may cause the student to receive admonition, warning or censure and/or be subject to reduction of grade, academic or disciplinary probation, suspension, or dismissal.

Each student will sign and date a statement indicating that he/she has been informed of the department's and the School of Health Professions's policies and the regulations and conditions related to academic and nonacademic misconduct.

M. EMPLOYMENT WHILE IN THE PROGRAM

One must allow sufficient study time outside of school to read, absorb, and study complex material. Because this is a professional program, one should not expect to work outside of school the same number of hours as one might have done on the undergraduate campus. Suggested times to put aside for studying outside of class are from 3-6 hours or more weekly per unit, depending on the length and difficulty of the unit. Some students may need more time. In any case, outside employment must not be allowed to interfere with the student's need for sleep, study time, successful performance both in clinical work and academically, and other necessities of a balanced life, both inside and outside of class.

Additionally, students need to spend time during the day viewing slides from the teaching file to learn microscopic morphology, to self-test, and to develop differential diagnoses between various entities. This is critical in developing your diagnostic skills.

N. ELECTRONIC DEVICES

1. Cell phones - These may **not** be used during classtime or during microscopic review, and may **not** be present on one's person during a test. The making or receipt of phone calls during lecture is interrupting, rude, and unprofessional. Appropriate times for phone calls are during announced breaks or at lunch. Failure to abide by these guidelines make the student subject to disciplinary action.
2. Earphones – After one is screening for a grade, one may use earphones to listen to music but,
 - a) it cannot interfere with your screening efficiency
 - b) it cannot disturb others, i.e should be at a low volume so no one else can hear
 - c) it cannot interfere with needed instruction. Failure to abide by these guidelines may result in the total restriction on the use of earphones or other disciplinary action.

GRIEVANCE PROCEDURE FOR THE KU CYTOTECHNOLOGY PROGRAM

As stated in the School of Health Professions Student Grievance Procedure, the department of Cytotechnology shall establish a grievance procedure to be used by a student should a grievance arise in the course of the student's program of study.

ISSUES INVOLVING GRADES OF A PARTICULAR CLASS SHOULD BE RESOLVED BETWEEN THE INSTRUCTOR OF THE COURSE AND THE STUDENT, AND WILL NORMALLY NOT BE CONSIDERED AS GROUNDS FOR GRIEVANCE. EXCEPTIONAL CIRCUMSTANCES MUST BE EVIDENT FOR GRADE MATTERS TO FALL WITHIN GROUNDS FOR GRIEVANCE.

It is the student's responsibility to follow the proper sequence in the Grievance Procedure:

1. The student will make a good faith effort to resolve the matter with the party involved.
2. If the student's effort with the party does not resolve the concern, and if the student wishes to pursue the grievance further, the student will exercise the option to discuss the matter with the chairperson or designee of the department.
3. If the student's effort with the Chairperson or designee does not resolve the concern, and if the student wishes to pursue to matter further, the student will request in writing to the Department Chairperson or designee the opportunity to voice his/her concern to the departmental grievance committee as established by the department.
4. The student will state the complaint in writing along with documented evidence supporting its validity and the effort that has been made to resolve the issue. The letter will be delivered to the Program Director within five working days of exhaustion of prior steps (1-2 above) to resolve the situation.
5. Within five working days after receipt of the written complaint, the Program Director shall appoint a Grievance Committee. The committee shall consist of three members, the Program Director, the Medical Director, and a departmental faculty member of the student's choosing.
6. Within five working days, the committee shall impartially hear the concerns of the student, shall take into consideration any evidence presented by the student, and shall hear the evidence of any other faculty or students who wish to present evidence. After all evidence has been heard, the committee shall prepare a written summary of the hearing, and its contents shall be viewed by the parties to the conflict. Within three working days after completing deliberations, the committee shall deliver its response to the student and any affected parties.
7. If, after following the departmental procedure, the student remains dissatisfied with the resolution of the concern, the student may appeal the decision to the Dean of the School of Health Professions, utilizing the School of Health Professions' Grievance Procedure as described in the SHP Student Handbook (online at <http://healthprofessions.kumc.edu/school/students/student-handbook.html> and in Appendix 1).

Competencies needed for graduation

The student shall demonstrate, in written tests, in practical screening, in kodachrome and glass slide tests, and in laboratory practice, his or her ability and knowledge in the following areas of cytology at a performance level of at least 80% in both written and practical evaluations. Also, students must be able to screen at least 50 slides in five hours with an accuracy of at least 90% by the end of the program.

Normal Cytology

Basic Cell Structure and Function

Anatomy and Histology of the Female Genital Tract

Normal, Inflammatory, Reparative, Premalignant, and Malignant Cellular Changes

Radiation and Chemotherapy Effect

Cytopreparation

Respiratory Tract

Serous Effusions

Cerebrospinal Fluid

Gastrointestinal Tract

Breast

Urinary Tract

Fine Needle Aspirations

Research and the Scientific Method

Molecular Diagnostics and Lab

Professional Organizations

There are several local, national, and international organizations for the cytotechnologist. Some of these offer student membership at reduced rates. Students are encouraged to participate in the many educational opportunities offered by these organizations. Some of these are:

HAAC - Heart of America Association of Cytotechnologists

ASCP -American Society of Clinical Pathologists

ASC - American Society of Cytopathology

ASCT- American Society for Cytotechnology

Behavioral Standards for Cytotechnology

In order for students to know and understand the behavior that is expected of them as cytotechnology students, several basic principles have been outlined below.

1. Although the faculty and staff are committed to providing the best educational experience possible for the students, nevertheless the laboratory and the hospital remains a clinical facility whose first priority must be patient care. When a conflict arises over time, space, personnel, equipment, etc. students must understand that patient care comes first.

It will be appreciated if the students recognize that the staff have important clinical responsibilities that will sometimes take priority over their educational duties.

Because the laboratory is committed to patient care, it will also be appreciated if the students recognize that the screening room must maintain a degree of quiet so that the staff can concentrate on their screening duties. For this reason, only radios with earphone are allowed, and then only if their use does not interfere with the student's progress.

2. The curriculum of the cytotechnology course is quite rigorous and requires a great deal of reading, effort, and study to successfully complete. Frequently, time will be available in the morning for individual or group study. This time must be utilized for studying glass slides from the teaching file, reviewing kodachromes or laser disk images, and other cytology related tasks. Recreational reading, talking, or other non-cytology related activities are inappropriate and reflect poorly on the student. Part time employment should not interfere with the student's attendance for the entire day nor with his or her performance in the program.

3. The faculty is committed to ensuring the success of every student who graduates from our program. We are much more concerned with your eventual ability to function successfully as a practicing cytotechnologist than with the letter grade that you receive from the program. Although grades are a necessary requirement for accreditation, degree conferral, etc. students are encouraged to seek from the curriculum what they will need to become competent cytotechnologists, rather than the minimum needed to achieve a certain grade. Professionals realize that they must be committed to lifelong education, and cytotechnologists entering the workforce must realize that the educational program can only hope to give them the basics for their own continued progress in the field.

4. Cytotechnology is a field in which cells are examined microscopically in order to detect and diagnose disease states. Although many of the parameters of the morphologic changes of these disease states have been quantified, nevertheless the process remains one of individual judgment and is subjective to a degree.

Therefore, the student must understand that the field itself is subject to small differences of opinion regarding the diagnosis of a given slide. These differences will be present in any workplace in which the student will eventually find himself. Just as in baseball, when the umpire must rule on a close call at home, the staff must rule on differences in slide interpretation between the student and the cytotechnologist. Although a different staff member may have ruled differently, the student should respect the opinion of the staff member responsible for their slides and restrict their questions and concerns to that staff member. Every effort is made to be fair, consistent, and within the parameters of the field.

Although requesting help from the staff member regarding an opinion on a certain field or slide is expected early in the fall semester, the ability to make independent judgments is critical to eventual success in the field. Therefore, it is expected that, except in extraordinary circumstances, consultations with staff members before a slide is diagnosed by the student will end by at least Nov. 1. Post diagnosis consultations are strongly encouraged throughout the year.

5. The curriculum is designed to simulate actual clinical practice so that the students are prepared to enter the workforce with the ability to accurately evaluate slides at a rate of 10 per hour. For the staff to accurately evaluate the student's ability to accomplish this, the student is restricted to five hours of screening time per day. Once that five hours are completed, the slides should not be re-evaluated until after they have been evaluated by the cytotechnologist.

Also, it is expected that the student will take the topmost box of slides from the stack, just as if he or she were in the workplace. Quotas may only be adjusted by the staff cytotechnologist. Strict adherence to screening guidelines is an advantage for the student so that he or she will be well prepared to perform on the job.

6. Since this is a clinical facility, it is expected that your dress, your behavior, and your attitude will at all times be appropriate for a student in a professional health care field. Whether you are in the laboratory area or not, your behavior reflects on our program.

Best wishes for the upcoming school year! Feel free to discuss any concerns that you may have about your progress or any aspect of the program with Marilee Means, the program director. We are enthusiastic about the prospect of introducing you to a field in which we have gained so much professional satisfaction. We hope that you will also come to learn, to understand, and to feel confident about your skills and abilities in the field of cytotechnology.

Cytotechnology, an allied health profession, plays a key role in the delivery of high quality medical care. Cytotechnologists perform the initial work in detecting and diagnosing cancer by identifying malignant cells in patient specimens. Various other benign and pre-malignant conditions can also be detected. When abnormalities are found, a pathologist reviews the slides and makes the final interpretation. Also, the cytotechnologist prepares and stains the microscopic slides using a variety of laboratory stains and equipment. Fine needle aspiration is becoming an increasingly important diagnostic tool, and the cytotechnologist must be trained to assist in this technique as well as to interpret the material derived from the various body sites. A working knowledge about other ancillary techniques such as immunostaining, image analysis, flow cytometry, and molecular pathology also is useful for the cytotechnologist. The program is accredited by the Committee on Accreditation of Allied Health Education Programs (CAAHEP) after review by the Cytotechnology Program Review Committee of the American Society of Cytopathology (ASC).

CYTOTECHNOLOGY COURSES

CYTO 300 Introduction to Cytology (5)

Orientation to the profession of cytotechnology including basic cell biology, ethics, the microscope, history of the profession. Also basic concepts of pathology are introduced including normal, benign proliferative, inflammatory, and reparative processes. The cellular alterations caused by these processes are introduced using the female genital system. The histology, anatomy, and endocrine system of the female genital tract are also covered. Microscopy of this section includes proper use and care of the microscope, hormonal cytology, and the range of normal reparative reactions. The recognition of specific infectious agents and/or their cellular manifestations is also included using the female genital tract as the body system under investigation. Prerequisites: Admission to the Cytotechnology Program or permission of the instructor.

Units contained within CYTO 300 include orientation, hormonal cytology, cytotechnology and the microscope, basic cell structure, anatomy, histology, normal cytology, and benign proliferative cytology, and inflammation and repair.

CYTO 321 Neoplasia in the Female Genital Tract: I (5)

The pathologic concepts of neoplasia, the morphogenesis of carcinoma, and the cellular changes associated with both premalignant and malignant changes of squamous cell lesions in the cervix are studied. Microscopy in this section includes pre-screening of clinical case load identifying normal and abnormal cellular criteria. Prerequisites: CYTO 300 or the instructor's permission.

Units contained within CYTO 321 include dysplasia, CIS, and squamous cell carcinoma of the uterine cervix.

CYTO 322 Neoplasia in the Female Genital Tract: II (6)

A continuation of CYTO 321 with the emphasis on lesions of the uterine corpus, metastatic lesions, and lesions of the vulva and vagina. Also treatment effect and

pregnancy changes are included in this section. Practical microscopy is also continued with the pre-screening of clinical cases. Prerequisites: CYTO 321 or the instructor's permission.

Units contained within this course include diseases of the uterine corpus, radiation effect, metastatic disease, pregnancy changes, and diseases of the vulva and vagina, review, and a comprehensive gyn examination.

CYTO 523 Fundamentals of Analytical Techniques (1)

This course will emphasize safety, analytical methods such as pipetting, quality control, spectrophotometry, curve analysis, and laboratory mathematics.

This is a combined lecture, lab, and recitation course taken with the CLS class.

CYTO 355 Cytology Lab Management, Respiratory Cytology and Oral Cytology (4)

Cytology lab regulations and QC requirements. Management requirements regarding safety, quality improvement, and personnel. Also, the normal, benign, and malignant changes of the upper and lower respiratory tract and the oral cavity. The anatomy, histology, and cytology of each of the body sites is studied as well as infectious agents common to these sites. Microscopy includes prescreening gynecologic material while further increasing speed and accuracy. Respiratory and oral specimens are also included in the practical microscopy. Students rotate through the processing laboratory. Prerequisites: CYTO 322 or permission of the instructor.

Units include lab management, benign and malignant respiratory, and oral cytology.

CYTO 370 Effusions, CSF, and Miscellaneous Cytology (3)

This course includes the cytology of the reticulo-endothelial system, effusions, CSF, and other miscellaneous fluids. Normal, benign, and malignant cellular findings are covered as well as the anatomy and histology of each body site. Microscopy includes further practice in gyn material and all non-gyn specimens studied to this point. Students continue to rotate through the processing laboratory. Prerequisites: CYTO 355 or instructor's permission.

Units include the reticuloendothelial system, effusions, CSF, synovial fluids, and eye cytology.

CYTO 380 GI, Breast, GU, and FNA Cytology (6)

This course includes the cytology of the GI system, the breast, the urinary tract, and other miscellaneous body sites. The anatomy and histology of each of the body sites is studied; cellular criteria for benign, normal, and malignant changes are introduced. Advanced topics such as aspiration cytology will also be covered. Microscopy includes further practice in the pre-screening of gyn material as well as all non-gyn material studied to this point. Students continue to rotate through the processing laboratory. Prerequisites: CYTO 370 or the instructor's permission.

Units include GI, breast, Urine, and FNA cytology as well as the non-gyn review and comprehensive examination.

CYTO 415 Scientific Method and Literature in Cytology (1)

This course will focus on the scientific method and research tools as used in recent journal articles. Discussion will specifically focus on critical evaluation of the conclusions presented and the evidence used to support those conclusions. Also, data retrieval will be practiced as the students research and write a paper on a cytology related topic. Prerequisites: CYTO 380 or instructor's permission.

Units include Scientific Method and Research and the writing and presentation of an interesting case report as well as a paper on cytology related topic.

CYTO 420 Advanced Practicum in Cytology (2)

Microscopy includes further practice in the screening of all gyn and non-gyn material at professional entry levels of speed and accuracy. Students continue to rotate through the processing laboratory and participate in case conference. Prerequisites: CYTO 380 or instructor's permission.

CYTO 450 Advanced Topics in Cytology (2)

This course will include advanced topics in cytology. Units include guest lectures. A comprehensive final examination completes the course. Prerequisites: CYTO 420 or instructor's permission.

Units include the cumulative review and cumulative examination.

CLS 605 Introduction to Molecular Diagnostics (1)

An introduction to molecular biology and molecular biological methodologies and technologies commonly used in basic, applied, and diagnostic laboratories. An emphasis is placed on molecular biology principles and techniques used in the clinical laboratory for diagnosis, prognosis, and treatment of disease.

CLS 607 Introduction to Molecular Diagnostics, Lab (1)

This course accompanies the CLS 605 course and introduces several procedures used in the molecular laboratory. This course will have a \$100.00 lab fee.

CLS 622 Problems in Molecular Diagnostics (2)

A targeted review of current theory, techniques, and applications of molecular diagnostics and molecular immunology. Review in each topic is augmented with situation simulations in research and diagnostics applications of the appropriate techniques.

**KU CYTOTECHNOLOGY PROGRAM
CYTO 300 INTRODUCTION TO CYTOLOGY
Fall Semester, 5 Credit Hours**

TIME: By appointment, Mon. - Fri.
PLACE: As assigned

INSTRUCTORS: Marilee Means, Ph.D., SCT(ASCP), Room G053 Olathe Pavillion, (913) 588-1177
Courtney Robinson, Room 1602 Bell
(913) 588-1179 Heather Gallagher-Nelson, Room 1602 Bell
Shellie Vadnais, Room 1602 Bell
Sue Dillon, Room 1602 Bell

OFFICE HOURS: All of the instructors will be available before and after class and by appointment at mutually convenient times.

COURSE DESCRIPTION: See pages 22-24 of KU Cytotechnology Student Handbook.

COURSE OBJECTIVES: See pages 41-70 of KU Cytotechnology Student Handbook.

COURSE FORMAT: Lecture and laboratory. A combination of lecture, kodachrome, and glass slide instruction as well as laboratory instruction will make up this coursework.

GRADING POLICY: The grade for this course will be calculated using the following formula:

Written unit tests = 50%
Practical unit tests = 50%

Practical tests include kodachrome tests, glass slide tests, and computer image tests. The grade will be calculated using the grading scale found on page 4 of the Student Handbook. All grades and scores must conform to departmental policies and academic standards as found on page 4-6 of the Student Handbook.

COURSE READINGS: The course readings as contained in the Course Outline page 17-18, weeks 0-6 will be required in this course.

TOPIC OUTLINE: This course will cover Orientation, Safety, Introduction to Cytology, Laboratory Instruction, Cell biology, Medical Terminology, Anatomy, Histology, Normal Cells, Benign Proliferative Reactions, Hormonal Cytology, Inflammation, and Repair.

EXAM SCHEDULE: As assigned per outline.

The faculty reserves the right to make minor adjustments in this schedule if needed. The students will be notified at the earliest opportunity, if and when such adjustments are needed.

Any student with a disability who is taking this course and needs an accommodation to complete the course requirements should contact the instructor or the Equal Opportunity/Disability Specialist at (913) 588-7813, TDD (913) 588-7963.

Any student who does not understand and/or accept the contents and terms of this syllabus must notify the instructor in writing within a week after receiving this syllabus.

KU CYTOTECHNOLOGY PROGRAM
CYTO 321 NEOPLASIA IN THE FEMALE GENITAL TRACT, I
Fall Semester, 5 Credit Hours

TIME: By appointment, Mon. - Fri.
PLACE: As assigned

INSTRUCTORS: Marilee Means, Ph.D., SCT(ASCP), G053 Olathe, 588-1177
(913) 588-1179 Courtney Robinson, Room 1602 Bell
Heather Gallagher-Nelson, Room 1602 Bell
Shellie Vadnais, Room 1602 Bell
Sue Dillon, Room 1602 Bell

OFFICE HOURS: All of the instructors will be available before and after class and by appointment at mutually convenient times.

COURSE DESCRIPTION: See pages 22-24 of KU Cytotechnology Student Handbook.

COURSE OBJECTIVES: See pages 41-70 of KU Cytotechnology Student Handbook.

COURSE FORMAT: Lecture and laboratory. A combination of lecture, kodachrome, and glass slide instruction as well as laboratory instruction will make up this coursework. In addition, the student will be evaluated on daily screening scores.

GRADING POLICY: The grade for this course will be calculated using the following formula:

Written unit tests = 25% (W)
Practical unit tests = 25% (P)
Screening Score = 50% (S)

$$\frac{W + P}{2} = \text{Unit test score} = U \qquad \frac{U + S}{2} = \text{Course Score}$$

Practical tests include kodachrome tests, glass slide tests, and computer image tests. The Course Score will be converted to a grade using the grading scale found on page 4 of the Student Handbook. All grades and scores must conform to departmental policies and academic standards as found on page 4-6 of the Student Handbook.

COURSE READINGS: The course readings as contained in the Course Outline page 17-18, weeks 7-12 will be required in this course.

TOPIC OUTLINE: This course will cover Endocrinopathies, Cytogenetics, Dysplasia, CIS, and Squamous Cell Carcinoma of the Cervix.

EXAM SCHEDULE: As assigned per outline.

The faculty reserves the right to make minor adjustments in this schedule if needed. The students will be notified at the earliest opportunity, if and when such adjustments are needed.

Any student with a disability who is taking this course and needs an accommodation to complete the course requirements should contact the instructor or the Equal Opportunity/Disability Specialist at (913) 588-7813, TDD (913) 588-7963.

Any student who does not understand and/or accept the contents and terms of this syllabus must notify the instructor in writing within a week after receiving this syllabus.

KU CYTOTECHNOLOGY PROGRAM
CYTO 322 NEOPLASIA IN THE FEMALE GENITAL TRACT, II
Fall Semester, 6 Credit Hours

TIME: By appointment, Mon. - Fri.
PLACE: As assigned

INSTRUCTORS: Marilee Means, Ph.D., SCT(ASCP), G053 Olathe, 588-1177
 (913) 588-1179 Courtney Robinson, Room 1602 Bell
 Heather Gallagher-Nelson, Room 1602 Bell
 Shellie Vadnais, Room 1602 Bell
 Sue Dillon, Room 1602 Bell

OFFICE HOURS: All of the instructors will be available before and after class and by appointment at mutually convenient times.

COURSE DESCRIPTION: See pages 22-24 of KU Cytotechnology Student Handbook.

COURSE OBJECTIVES: See pages 50-83 of the Student Handbook

COURSE FORMAT: Lecture and laboratory. A combination of lecture, kodachrome, and glass slide instruction as well as laboratory instruction will make up this coursework. In addition, the student will be evaluated on daily screening scores. A cumulative examination over the entire semester will complete the course. In addition, the results of the Professional Development Evaluation, which includes cooperation, work habits, communication skills, responsibility, interpersonal relationships, honesty, and laboratory performance will comprise 10% of the score for this course.

GRADING POLICY: The grade for this course will be calculated using the following formula:

Written unit tests	=	17%* (W)	*% are approximate. See below for exact formula.
Practical unit tests	=	17% (P)	
Comprehensive Written	=	8% (CW)	
Comprehensive Pract.	=	8% (CP)	
Screening Score	=	50% (S)	
Professional Dev.	=	10% (PD)	
$\frac{W + P}{2}$ = Unit test score = U		$\frac{CW + CP}{2}$ = Comprehensive Score = C	

$\frac{2U + C}{2}$ = Weighted average of tests = T

$\frac{T + S}{2}$ = $\frac{\text{Pre Score} \times 9 + \text{PD score}}{10}$ = **Course Score**

Practical tests include kodachrome tests, glass slide tests, and computer image tests. The Course Score will be converted to a grade using the grading scale found on page 4 of the Student Handbook. All grades and scores must conform to departmental policies and academic standards as found on page 4-6 of the Student Handbook.

COURSE READINGS: The course readings as contained in the Course Outline page 17-18, weeks 13-18 will be required in this course.

TOPIC OUTLINE: This course will cover Diseases of the Uterine Corpus, Radiation Effect, Metastatic Disease, Vulva, Vagina, Pregnancy, Review, and Comprehensive Gyn Final.

EXAM SCHEDULE: As assigned per outline. Gyn Final date is listed on course outline.

The faculty reserves the right to make minor adjustments in this schedule if needed. The students will be notified at the earliest opportunity, if and when such adjustments are needed.

Any student with a disability who is taking this course and needs an accommodation to complete the course requirements should contact the instructor or the Equal Opportunity/Disability Specialist at (913) 588-7813, TDD (913) 588-7963.

Any student who does not understand and/or accept the contents and terms of this syllabus must notify the instructor in writing within a week after receiving this syllabus.

KU CYTOTECHNOLOGY PROGRAM
CYTO 523 FUNDAMENTALS OF ANALYTIC TECHNIQUES
Fall Semester, 1 Credit Hour

TIME: Thurs. 9-12 and 12:30 -1:30, first 4 weeks, Fall semester

PLACE: CLS classroom, G014 Eaton

INSTRUCTORS: Jan Hudzicki, (913) 588-0153, G014 Eaton
Jennifer Jones, (913) 588-1099, G014 Eaton

OFFICE HOURS: By appointment

Course Description, Objectives, Assignments, Methods of Evaluation, Grading Scale, Syllabus, etc. are all available from CLS instructors.

The faculty reserves the right to make minor adjustments in this schedule if needed. The students will be notified at the earliest opportunity, if and when such adjustments are needed.

Any student with a disability who is taking this course and needs an accommodation to complete the course requirements should contact the instructor or the Equal Opportunity/Disability Specialist at (913) 588-7813, TDD (913) 588-7963.

Any student who does not understand and/or accept the contents and terms of this syllabus must notify the instructor in writing within a week after receiving this syllabus.

KU CYTOTECHNOLOGY PROGRAM
CYTO 355 CYTOLOGY LAB MANAGEMENT,
RESPIRATORY, AND ORAL CYTOLOGY
Spring Semester, 4 Credit Hours

TIME: By appointment, Mon. - Fri.
PLACE: As assigned

INSTRUCTORS: Marilee Means, Ph.D., SCT(ASCP), G053 Olathe, 588-1177
(913) 588-1179 Courtney Robinson, Room 1602 Bell
Heather Gallagher-Nelson, Room 1602 Bell
Sue Dillon, Room 1602 Bell
Shellie Vadnais, Room 1602 Bell

OFFICE HOURS: All of the instructors will be available before and after class and by appointment at mutually convenient times.

COURSE DESCRIPTION: See pages 22-24 of KU Cytotechnology Student Handbook.

COURSE OBJECTIVES: See pages 41-70 of KU Cytotechnology Student Handbook.

COURSE FORMAT: Lecture and laboratory. A combination of lecture, kodachrome, and glass slide instruction as well as laboratory instruction will make up this coursework. In addition, the student will be evaluated on daily screening scores.

GRADING POLICY: The grade for this course will be calculated using the following formula:

Written unit tests = 25% (W)
Practical unit tests = 25% (P)
Screening Score = 50% (S)

$$\frac{W + P}{2} = \text{Unit test score} = U \qquad \frac{U + S}{2} = \text{Course Score}$$

Practical tests include kodachrome tests, glass slide tests, and computer image tests. The Course Score will be converted to a grade using the grading scale found on page 4 of the Student Handbook. All grades and scores must conform to departmental policies and academic standards as found on page 4-6 of the Student Handbook.

COURSE READINGS: The course readings as contained in the Course Outline page 17-18, weeks 21-23 will be required in this course.

TOPIC OUTLINE: Cytology lab regulations and QC requirements. This course will also cover the cytology of the respiratory tract in health and disease. Oral cytology will also be included.

EXAM SCHEDULE: As assigned per outline.

The faculty reserves the right to make minor adjustments in this schedule if needed. The students will be notified at the earliest opportunity, if and when such adjustments are needed.

Any student with a disability who is taking this course and needs an accommodation to complete the course requirements should contact the instructor or the Equal Opportunity/Disability Specialist at (913) 588-7813, TDD (913) 588-7963.

Any student who does not understand and/or accept the contents and terms of this syllabus must notify the instructor in writing within a week after receiving this syllabus.

KU CYTOTECHNOLOGY PROGRAM
CYTO 370 EFFUSIONS, CSF, AND MISCELLANEOUS CYTOLOGY
Spring Semester, 3 Credit Hours

TIME: By appointment, Mon. - Fri.
PLACE: As assigned

INSTRUCTORS: Marilee Means, Ph.D., SCT(ASCP),G053 Olathe, 588-1177
(913) 588-1179 Courtney Robinson, Room 1602 Bell
Heather Gallagher-Nelson, Room 1602 Bell
Sue Dillon, Room 1602 Bell
Shellie Vadnais, Room 1602 Bell

OFFICE HOURS: All of the instructors will be available before and after class and by appointment at mutually convenient times.

COURSE DESCRIPTION: See pages 22-24 of KU Cytotechnology Student Handbook.

COURSE OBJECTIVES: See pages 41-70 of KU Cytotechnology Student Handbook.

COURSE FORMAT: Lecture and laboratory. A combination of lecture, kodachrome, and glass slide instruction as well as laboratory instruction will make up this coursework. In addition, the student will be evaluated on daily screening scores.

GRADING POLICY: The grade for this course will be calculated using the following formula:

Written unit tests = 25% (W)
Practical unit tests = 25% (P)
Screening Score = 50% (S)

$$\frac{W + P}{2} = \text{Unit test score} = U \qquad \frac{U + S}{2} = \text{Course Score}$$

Practical tests include kodachrome tests, glass slide tests, and computer image tests. The Course Score will be converted to a grade using the grading scale found on page 4 of the Student Handbook. All grades and scores must conform to departmental policies and academic standards as found on page 4-6 of the Student Handbook.

COURSE READINGS: The course readings as contained in the Course Outline page 17-18, weeks 24 - 27 will be required in this course.

TOPIC OUTLINE: This course will cover Reticuloendothelial Malignancies, Effusions, and CSF cytology.

EXAM SCHEDULE: As assigned per outline.

The faculty reserves the right to make minor adjustments in this schedule if needed. The students will be notified at the earliest opportunity, if and when such adjustments are needed.

Any student with a disability who is taking this course and needs an accommodation to complete the course requirements should contact the instructor or the Equal Opportunity/Disability Specialist at (913) 588-7813, TDD (913) 588-7963.

Any student who does not understand and/or accept the contents and terms of this syllabus must notify the instructor in writing within a week after receiving this syllabus.

KU CYTOTECHNOLOGY PROGRAM
CYTO 380 GI, BREAST, GU, AND FNA CYTOLOGY
Spring Semester, 6 Credit Hours

TIME: By appointment, Mon. - Fri.
PLACE: As assigned.

INSTRUCTORS: Marilee Means, Ph.D., SCT(ASCPG053 Olathe, 588-1177
(913) 588-1179 Courtney Robinson, Room 1602 Bell
Heather Gallagher-Nelson, Room 1602 Bell
Sue Dillon, Room 1602 Bell
Shellie Vadnais, Room 1602 Bell

OFFICE HOURS: All of the instructors will be available before and after class and by appointment at mutually convenient times.

COURSE DESCRIPTION: See pages 22-24 of KU Cytotechnology Student Handbook.

COURSE OBJECTIVES: See pages 41-70 of KU Cytotechnology Student Handbook.

COURSE FORMAT: Lecture and laboratory. A combination of lecture, kodachrome, and glass slide instruction as well as laboratory instruction will make up this coursework. In addition, the student will be evaluated on daily screening scores. A cumulative examination over the entire semester will complete the course.

GRADING POLICY: The grade for this course will be calculated using the following formula:
Written unit tests = 17%* (W) *% are approximate. See below for exact
Practical unit tests = 17% (P) formula.
Comprehensive Written = 8% (CW)
Comprehensive Pract. = 8% (CP)
Screening Score = 50% (S)

$$\frac{W + P}{2} = \text{Unit test score} = U$$

$$\frac{CW + CP}{2} = \text{Comprehensive Score} = C$$

$$\frac{2U + C}{2} = \text{Weighted average of tests} = T$$

$$\frac{T + S}{2} = \text{Course Score}$$

Practical tests include kodachrome tests, glass slide tests, and computer image tests. The Course Score will be converted to a grade using the grading scale found on page 4 of the Student Handbook. All grades and scores must conform to departmental policies and academic standards as found on page 4-6 of the Student Handbook.

COURSE READINGS: The course readings as contained in the Course Outline page 17-18, weeks 28-38 will be required in this course.

TOPIC OUTLINE: This course will cover the cytology of the GI Tract, the Breast, the GU Tract, and FNA procedures. Additionally, a cumulative review of the entire spring semester is included and a comprehensive non-gynecologic final examination.

EXAM SCHEDULE: As assigned per outline. Non Gyn Final date is listed on course outline.

The faculty reserves the right to make minor adjustments in this schedule if needed. The students will be notified at the earliest opportunity, if and when such adjustments are needed.

Any student with a disability who is taking this course and needs an accommodation to complete the course requirements should contact the instructor or the Equal Opportunity/Disability Specialist at (913) 588-7813, TDD (913) 588-7963.

Any student who does not understand and/or accept the contents and terms of this syllabus must notify the instructor in writing within a week after receiving this syllabus.

KU CYTOTECHNOLOGY PROGRAM
CYTO 415 SCIENTIFIC METHOD AND LITERATURE IN CYTOLOGY
Summer Semester, 1 Credit Hour

TIME: By appointment, Mon. - Fri.
PLACE: As assigned

INSTRUCTORS: Marilee Means, Ph.D., SCT(ASCP), G053 Olathe, 588-1177
(913) 588-1179 Courtney Robinson, Room 1602 Bell
Heather Gallagher-Nelson, Room 1602 Bell
Sue Dillon, Room 1602 Bell
Shellie Vadnais, Room 1602 Bell

OFFICE HOURS: All of the instructors will be available before and after class and by appointment at mutually convenient times.

COURSE DESCRIPTION: See pages 22-24 of KU Cytotechnology Student Handbook.

COURSE OBJECTIVES: See pages 41-70 of KU Cytotechnology Student Handbook.

COURSE FORMAT: Lecture and 2 papers. A combination of lecture, seminar format, and the presentation of a paper on a topic of interest in cytology will make up this coursework.

GRADING POLICY: The grade for this course will be calculated using the following formula:

Written unit test	=	34% (W)
Paper	=	33% (P)
Interesting Case	=	33% (IC)

W+ P + IC = Course Score

The Course Score will be converted to a grade using the grading scale found on page 4 of the Student Handbook. All grades and scores must conform to departmental policies and academic standards as found on page 4-6 of the Student Handbook.

COURSE READINGS: The course readings as contained in the Course Outline page 17-18, weeks 39-46 will be required in this course.

TOPIC OUTLINE: This course will cover the use of the Scientific Method in Cytology, Research Tools including a brief review of statistics, and Critical Reading Skills in Cytology Literature.

EXAM SCHEDULE: As assigned per outline. Gyn Final date is listed on course outline.

The faculty reserves the right to make minor adjustments in this schedule if needed. The students will be notified at the earliest opportunity, if and when such adjustments are needed.

Any student with a disability who is taking this course and needs an accommodation to complete the course requirements should contact the instructor or the Equal Opportunity/Disability Specialist at (913) 588-7813, TDD (913) 588-7963.

Any student who does not understand and/or accept the contents and terms of this syllabus must notify the instructor in writing within a week after receiving this syllabus.

KU CYTOTECHNOLOGY PROGRAM
CYTO 420 ADVANCED PRACTICUM IN CYTOLOGY
Summer Semester, 2 Credit Hours

TIME: By appointment, Mon. - Fri.
PLACE: Cytology Laboratory, 1604 Bell
Rotation Sites as assigned

INSTRUCTORS: Marilee Means, Ph.D., SCT(ASCP),G053 Olathe, 588-1177
(913) 588-1179 Courtney Robinson, Room 1602 Bell
Heather Gallagher-Nelson, Room 1602 Bell
Sue Dillon, Room 1602 Bell
Shellie Vadnais, Room 1602 Bell

OFFICE HOURS: All of the instructors will be available before and after class and by appointment at mutually convenient times.

COURSE DESCRIPTION: See pages 22-24 of KU Cytotechnology Student Handbook.

COURSE OBJECTIVES: See pages 41-70 of KU Cytotechnology Student Handbook.

COURSE FORMAT: Laboratory. Microscopy makes up the total of this coursework.

GRADING POLICY: The grade for this course will be calculated using the following formula:

Screening Score = **Course Score**

The Course Score will be converted to a grade using the grading scale found on page 4 of the Student Handbook. All grades and scores must conform to departmental policies and academic standards as found on page 4-6 of the Student Handbook.

COURSE READINGS: The course readings as contained in the Course Outline page 17-18, weeks 38-46 will be required in this course.

TOPIC OUTLINE: This course will cover advanced microscopy and clinical practice.

EXAM SCHEDULE: No exam.

The faculty reserves the right to make minor adjustments in this schedule if needed. The students will be notified at the earliest opportunity, if and when such adjustments are needed.

Any student with a disability who is taking this course and needs an accommodation to complete the course requirements should contact the instructor or the Equal Opportunity/Disability Specialist at (913) 588-7813, TDD (913) 588-7963.

Any student who does not understand and/or accept the contents and terms of this syllabus must notify the instructor in writing within a week after receiving this syllabus.

KU CYTOTECHNOLOGY PROGRAM
CYTO 450 ADVANCED TOPICS IN CYTOLOGY
Summer Semester, 2 Credit Hours

TIME: By appointment, Mon. - Fri.
PLACE: As assigned

INSTRUCTORS: Marilee Means, Ph.D., SCT(ASCP), G053 Olathe, 588-1177
(913) 588-1179 Courtney Robinson, Room 1602 Bell
Heather Gallagher-Nelson, Room 1602 Bell
Sue Dillon, Room 1602 Bell
Shellie Vadnais, Room 1602 Bell

OFFICE HOURS: All of the instructors will be available before and after class and by appointment at mutually convenient times.

COURSE DESCRIPTION: See pages 22-24 of KU Cytotechnology Student Handbook.

COURSE OBJECTIVES: See pages 41-70 of KU Cytotechnology Student Handbook.

COURSE FORMAT: Lecture and cumulative exam. Review of the entire previous year and a cumulative examination over the entire year will complete the course.

GRADING POLICY: The grade for this course will be calculated using the following formula:

Comprehensive Written = (CW)
Comprehensive Pract. = (CP)

$$\frac{CW + CP}{2} = \text{Comprehensive Score} = C$$

C = Course Score

Practical tests include kodachrome tests, glass slide tests, and computer image tests. The Course Score will be converted to a grade using the grading scale found on page 4 of the Student Handbook. All grades and scores must conform to departmental policies and academic standards as found on page 4-6 of the Student Handbook.

COURSE READINGS: The course readings as contained in the Course Outline page 17-18, weeks 39-48 will be required in this course.

TOPIC OUTLINE: This course will cover advanced topics in cytology, a review of the entire year's material, and the comprehensive final exam covering the whole curriculum.

EXAM SCHEDULE: As assigned per outline. The Cumulative Final date is listed on course outline.

The faculty reserves the right to make minor adjustments in this schedule if needed. The students will be notified at the earliest opportunity, if and when such adjustments are needed.

Any student with a disability who is taking this course and needs an accommodation to complete the course requirements should contact the instructor or the Equal Opportunity/Disability Specialist at (913) 588-7813, TDD (913) 588-7963.

Any student who does not understand and/or accept the contents and terms of this syllabus must notify the instructor in writing within a week after receiving this syllabus.

KU CYTOTECHNOLOGY PROGRAM
CLS 605 INTRODUCTION TO BIOTECHNOLOGY
Summer Semester, 1 Credit Hour

TIME: As assigned, first four weeks of summer semester

PLACE: G014 Eaton

INSTRUCTORS: Eric Elsinghorst, PhD

OFFICE HOURS: By appointment

Course Description, Objectives, Assignments, Methods of Evaluation, Grading Scale, Syllabus, etc. are all available from CLS instructor.

The faculty reserves the right to make minor adjustments in this schedule if needed. The students will be notified at the earliest opportunity, if and when such adjustments are needed.

Any student with a disability who is taking this course and needs an accommodation to complete the course requirements should contact the instructor or the Equal Opportunity/Disability Specialist at (913) 588-7813, TDD (913) 588-7963.

Any student who does not understand and/or accept the contents and terms of this syllabus must notify the instructor in writing within a week after receiving this syllabus.

KU CYTOTECHNOLOGY PROGRAM
CLS 607 INTRODUCTION TO BIOTECHNOLOGY LAB
Summer Semester, 1 Credit Hour

TIME: As assigned, first four weeks of summer

PLACE: G014 Eaton

INSTRUCTORS: Eric Elsinghorst, PhD

OFFICE HOURS: By appointment

Course Description, Objectives, Assignments, Methods of Evaluation, Grading Scale, Syllabus, etc. are all available from CLS instructor.

The faculty reserves the right to make minor adjustments in this schedule if needed. The students will be notified at the earliest opportunity, if and when such adjustments are needed.

Any student with a disability who is taking this course and needs an accommodation to complete the course requirements should contact the instructor or the Equal Opportunity/Disability Specialist at (913) 588-7813, TDD (913) 588-7963.

Any student who does not understand and/or accept the contents and terms of this syllabus must notify the instructor in writing within a week after receiving this syllabus.

KU CYTOTECHNOLOGY PROGRAM
CLS 662 PROBLEMS IN MOLECULAR DIAGNOSTICS
Summer Semester, 2 Credit Hours

TIME: Online

PLACE: Online

INSTRUCTORS: Eric Elsinghorst, PhD

OFFICE HOURS: By appointment

Course Description, Objectives, Assignments, Methods of Evaluation, Grading Scale, Syllabus, etc. are all available from CLS instructor.

The faculty reserves the right to make minor adjustments in this schedule if needed. The students will be notified at the earliest opportunity, if and when such adjustments are needed.

Any student with a disability who is taking this course and needs an accommodation to complete the course requirements should contact the instructor or the Equal Opportunity/Disability Specialist at (913) 588-7813, TDD (913) 588-7963.

Any student who does not understand and/or accept the contents and terms of this syllabus must notify the instructor in writing within a week after receiving this syllabus.

Students may find additional information and detailed policies at the websites below. Students are encouraged to consult these references for relevant topics such as Student rights and Responsibilities, Guidelines for Soliciting and Selling, No Smoking Policy and Hazardous Material Management and Chemical Hygiene Plans.

Reference Websites:

Hazardous Drug Policy and Procedures

<http://www2.kumc.edu/safety/hazdrugguidelines.html>

Chemical Hygiene Plan

<http://www2.kumc.edu/safety/policies.htm>

Student Health

<http://www.kumc.edu/student-services/student-health-services.html>

KU Medical Center No Smoking Policy

<http://www.kumc.edu/tobacco/>

KUMC Student Handbook – General Information

www.kumc.edu/studenthandbook/general.html

Guidelines for Soliciting and Selling

www.kumc.edu/service/acadsupt/facility/append1.html#E

KUMC Student Handbook – School of Health Professions

<http://healthprofessions.kumc.edu/school/students/student-handbook.html>

KUMC Student Rights and Responsibilities

www.kumc.edu/studentcenter/studentrights.html

Topic: Ethics for the Cytotechnologist, History of Cytology, The Microscope, Screening the Cellular Sample, The Evaluation of the Cellular Sample

Objectives: This unit is designed to acquaint the student with the history of cytology, the ethical considerations of a cytotechnologist, methods of screening and evaluating the cellular sample, and the theory and practice of using a microscope.

Performance Objectives: Upon completion of this unit, the student will be able to:

Discuss the ethical considerations involved in cytology which include:

The practice of discretion and confidentiality in regard to laboratory and patient records.

The respect of the importance and significance of specimen evaluation as it impacts patient care.

The practice of honesty and integrity in daily duties.

The practice of good personal relationships with peers, staff, and faculty.

Describe the basic history of cytology, including the men whose discoveries or concepts laid the foundations for the field.

Discuss the proper method for screening a slide.

Discuss the factors (such as nuclear size, staining, number of abnormal cells, etc.) that are to be evaluated in the slide.

Identify the parts of a light microscope.

Discuss resolving power and the factors that may influence it. Properly set up and align a microscope.

Identify common image problems and choose the best solution to resolve the problem, if possible.

Discuss dark-field, fluorescence, phase contrast, interference contrast, and electron microscopy including the situations in which these kinds of microscopy would be most applicable.

Discuss the reason for the difference in resolving power between an electron microscope and a light microscope.

Topic: Anatomy and Histology of the Female Genital Tract, Normal Cytology the Female Genital Tract, Benign Proliferative Reactions

Objectives: This unit is designed to acquaint the student with the normal anatomy and histology of the female genital tract. The unit is also designed to acquaint the student with the cytology of the normal cells and the benign proliferative reactions of the female genital tract.

Performance Objectives: Upon completion of this unit, the student will be able to:

Demonstrate knowledge of the anatomy of the component organs of the female genital tract by labeling an appropriate diagram.

Discuss the anatomy, embryology, and histology of the components of the female genital tract and correlate the histology of the components with their various functions.

Identify normal cellular components of the female genital tract. Correlate the histology of the various sites with the normal cells.

Discuss the morphologic criteria for the proper identification of normal cells in the female genital tract.

Discuss the cellular changes brought on by pregnancy, post-menopausal, pre-puberty, post-partum, and child bearing years.

Discuss the morphogenesis of squamous metaplasia as it develops from reserve cell hyperplasia.

Define squamous metaplasia. Identify squamous metaplasia, hyperkeratosis, and parakeratosis in the cellular sample.

Topic: Hormonal Cytology of the Normal Female Genital Tract

Objectives: This unit is designed to acquaint the student with the effects of hormones on the cytology of the female genital tract.

Performance Objectives: Upon completion of this unit the student will be able to:

Describe the morphology of superficial, intermediate, and parabasal cells and be able to recognize them under the microscope.

Discuss the normal; 28-day menstrual cycle and the hormones involved.

Identify the various cell patterns associated with hormonal states and hormonal therapy.

Discuss maturation indexes and the hormonal state they suggest.

Discuss cellular changes associated with pregnancy, post-menopausal states, pre-puberty, post-partum, child-bearing years, and the newborn.

Topic: Inflammation and Repair

Objectives: This unit is designed to acquaint the student with features of inflammation and repair within the female genital tract.

Performance Objectives: Upon completion of this unit the student will be able to:

Recognize the cells associated with inflammation including neutrophils, lymphocytes, histiocytes, plasma cells, and eosinophils.

Recognize the cellular components and smear patterns associated with acute and chronic inflammatory states as well as chronic follicular cervicitis.

List the four major categories (viral, bacterial, mycotic, and parasitic) of infectious organisms, giving examples of each as pertains to the female genital tract.

Describe the cellular changes associated with these organisms.

Identify microscopically, these cellular changes and/or the causative agent as applicable.

Describe the cellular changes associated with tissue repair.

Recognize reparative changes microscopically.

List conditions commonly associated with tissue repair.

Describe the manifestations of cellular degeneration.

Recognize the significance and identify various viral changes and parasites to include: Herpes, HPV, CMV, trichomonads, enterobius vermicularis, entamoeba histolytica, molluscum contagiosum, schistosoma hematobium.

Topic: Dysplasia of the Uterine Cervix

Objectives: This unit is designed to acquaint the student with the morphogenesis of carcinoma as it develops from dysplasia, the cytologic features of dysplasia, and the biologic significance of dysplasia.

Performance Objectives: Upon completion of this unit, the student will be able to:
Define dysplasia.

Demonstrate knowledge of the anatomic distribution of the various types of dysplasia.

Differentiate between the different types of dysplasia (keratinizing, nonkeratinizing, and metaplastic) and identify mixed types of these lesions.

Differentiate between dysplasia of varying severity (mild; moderate, and marked).

Discuss the morphologic criteria for identifying the different types of dysplasia.

Discuss the morphologic and quantitative criteria for identifying the degree of dysplasia.

Discuss the morphogenesis of dysplasia.

Discuss the biologic significance of the different types and degrees of dysplasia as they relate to the development of more severe lesions.

Discuss the criteria for the proper identification of dysplasia, as it relates specifically to slide background, arrangement of cells, number of abnormal cells, relative nuclear area, chromatin pattern, and nucleoli.

Discuss the cellular manifestations and significance of dysplasia in pregnancy.

Discuss the cellular reactions simulating dysplasia and their differential diagnoses.

Identify dysplasia and differentiate it from previously learned entities such as squamous metaplasia and repair.

Discuss the mean age at detection of dysplasia and the significance of this as compared with the mean age at detection of CIS and invasive carcinoma.

Discuss the various classification systems (descriptive, CIN, and Bethesda) and be able to evaluate a slide using any of them.

Topic: Carcinoma-In-Situ

Objectives: This unit is designed to acquaint the student with the biological significance, cytologic presentation and differential diagnosis of carcinoma-in-situ.

Performance Objectives: Upon completion of this unit the student should be able to:

Define carcinoma-in-situ.

Identify the types of carcinoma-in-situ (large, intermediate and small cell) and relate them to various anatomical sites.

Discuss the criteria for identification of the types of CIS, with emphasis on slide background, arrangement, number of abnormal cells, configuration, relative nuclear area, chromatin pattern and nucleoli.

Discuss the biological significance of CIS as it relates to progression to invasive carcinoma.

Discuss the mean age at detection of CIS.

Discuss treatment for CIS

Discuss the differential diagnoses for CIS and successfully differentiate hyperchromatic crowded groups (HCGs) microscopically.

Topic: Microinvasive Carcinoma

Objectives: This unit is designed to acquaint the student with the histomorphologic, biologic, and cytologic presentation of microinvasive carcinoma.

Performance Objectives: Upon completion of this unit the student will be able to:

Discuss the definition of microinvasive carcinoma.

Discuss the anatomical distribution and morphogenesis of microinvasive carcinoma as it relates to dysplasia and carcinoma-in-situ.

Discuss the biological significance of microinvasive carcinoma.

Discuss the cytologic differential diagnosis of dysplasia, carcinoma-in-situ, and microinvasive carcinoma.

Topic: Squamous Cell Carcinoma of the Uterine Cervix

Objectives: This unit is designed to acquaint the student with the biological significance, cytologic presentation, and differential diagnosis of invasive squamous cell carcinoma of the uterine cervix.

Performance Objectives: Upon completion of this unit the student will be able to:

Define invasive squamous cell carcinoma of the uterine cervix.

Recognize the histologic presentation of invasive carcinoma.

Relate the types of squamous cell carcinoma to the various anatomical locations.

Discuss the morphogenesis of cervical carcinoma as it relates to each type of squamous carcinoma.

Discuss the criteria for identification of each type of squamous cell carcinoma with particular attention to slide background, arrangement, configuration, number of abnormal cells, relative nuclear area, chromatin pattern, and macronucleoli.

Discuss the biological significance of squamous carcinoma as it relates to survival rate.

List the criteria for differential diagnosis of squamous carcinoma and recognize the cellular reactions simulating invasive carcinoma.

Discuss the mean age at detection and environmental and other risk factors relating to squamous carcinoma.

Topic: Cytology of the Breast

Objectives: This unit is designed to acquaint the student with the anatomy, histology, and cytology of the breast in health and disease.

Performance Objectives: Upon completion of this unit, the student will be able to:

Discuss the various collection methods for breast cytology.

Identify and label the components of the breast.

Discuss the anatomy and histology of the breast.

Discuss changes in the breast relating to endocrine changes such as puberty, lactation, and pregnancy.

Identify the normal cellular components of the various types of breast specimens.

Discuss and be able to differentiate the 3 types of breast specimens: nipple discharge smear, mammary cyst fluid, and FNA of the breast.

Discuss benign changes that may occur within the breast and the morphologic criteria for the identification of these changes.

Discuss the morphologic criteria for the different types of breast carcinoma.

Identify breast carcinoma on digital images and glass slides.

Discuss Paget's disease and its relationship to breast carcinoma.

Identify risk factors relating to women who develop carcinoma of the breast.

Topic: Cytology of Endometrium and Endocervix

Objectives: This unit is designed to acquaint the student with cytologic and histologic presentation of benign and malignancy conditions of the endometrium and also adenocarcinoma of the endocervix.

Performance Objectives: Upon completion of this unit the student should be able to:

Discuss the significance of the presence of endometrial cells in the cytologic smear in relationship to the menstrual cycle and menopausal and post-menopausal states.

Discuss changes in the endometrium as they are related to hormones.

Discuss the environmental factors and conditions that predispose a patient to develop abnormalities of the endometrium.

Discuss the benign conditions affecting the endometrium including endometritis, polyps, and hyperplasia.

Discuss the cytologic criteria and biologic significance of endometrial hyperplasia, specifically cystic hyperplasia, adenomatous hyperplasia, atypical hyperplasia and adenocarcinoma-in-situ.

Discuss the cytologic criteria and biologic significance of endometrial adenocarcinoma.

Discuss the cytologic criteria and biologic significance of endocervical adenocarcinoma.

Discuss the cytologic criteria and biologic significance of adenosquamous and adenoacanthoma of the endometrium and endocervix.

Discuss the differences between endometrial adenocarcinoma and endocervical adenocarcinoma.

Identify adenocarcinomas of the endometrium and endocervix and differentiate them from previously learned entities.

Differentiate between malignant and pre-malignant diseases of the uterine corpus.

Discuss the cytologic criteria and biological significance of AGUS lesions in the uterine corpus.

Topic: Cytology in Pregnancy

Objectives: This unit is designed to familiarize the student with the cytology of pregnancy. This will include normal pregnancy, pregnancy complication, and post partum cytology.

Performance Objectives: Upon completion of this unit, the student should be able to:

Describe the cytologic presentation of dysplasia and carcinoma-in-situ in pregnancy.

Describe the cellular components that are associated with pregnancy including syncytiotrophoblasts, cytotrophoblasts, and decidual cells.

Discuss the cytology of the cervix and vagina in normal pregnancy, especially cell patterns.

Discuss the cytology of amniotic fluid.

Discuss and identify the cytologic changes that may result from infection, abortion, fetal malformation, prematurity, rupture of fetal membranes, amniotic fluid embolism, postmaturity, neoplasia, and gestational trophoblastic disease.

Topic: Metastatic Disease and Rare Neoplasms of the Female Genital Tract

Objectives: This unit is designed to familiarize the student with rare neoplasms and tumors metastatic to the female genital tract.

Performance Objectives: Upon completion of this unit, the student will be able to:

Identify and describe the cytologic presentation of uterine sarcomas including mixed Mullerian tumor, leiomyosarcoma, and rhabdomyosarcoma.

Identify and describe the cytologic presentation of metastatic ovarian carcinoma.

Describe the cytologic presentation of rare neoplasms of the female genital tract including melanoma, botryoid sarcoma, and choriocarcinoma.

Topic: Ovarian Cytology

Objectives: This unit is designed to acquaint the student with the cytologic aspects pertaining to gynecologic specimens and those aspirated from the ovary or cul de sac.

Performance Objectives: Upon completion of this unit the student will be able to:

Discuss functioning and nonfunctioning ovarian cysts and their cytology.

Discuss solid or cystic carcinomas to include serous adenocarcinoma, mucinous cystadenocarcinoma, and feminizing and virilizing tumors.

Topic: Radiation Cell Changes

Objectives: This unit is designed to acquaint the student with the concept of radiation as applied to cytology. This will include the cytologic changes of normal cells as well as malignant cells.

Performance Objectives: Upon completion of this unit, the student should be able to:

Discuss the cytologic criteria for identification of radiation effect in the cellular sample.

Discuss the cytologic manifestation and biological significance of post-irradiation dysplasia in the uterine cervix.

Discuss the cytologic presentation of residual and recurrent carcinoma after radiation therapy.

Discuss the differential diagnosis of radiation changes.

Compare the significance of post-irradiation dysplasia to classical dysplasia.

Discuss the cytologic changes that may result from chemotherapy in the female genital tract.

Topic: Cytology of the Vulva and Vagina

Objectives: This unit is designed to acquaint the student with the cytologic aspects pertaining to specimens obtained from the vulva and vagina. This will include normal cytology as well as changes associated with malignancy and other disease processes.

Performance Objectives: Upon completion of this unit the student will be able to:

Identify inflammatory and dermatologic disorders of the vulva.

List the common benign and malignant tumors of the vulva.

Identify inflammatory disorders of the vagina.

List the common benign and malignant tumors of the vagina.

Discuss the significance of exposure to DES as it relates to vaginal adenosis and clear cell carcinoma.

Topic: Cytopreparatory Techniques

Objectives: This unit is designed to acquaint the student with both the routine and nonroutine cytopreparatory techniques. Included is a discussion of safety procedures, laboratory procedures, and laboratory organization.

Performance Objectives: Upon completion of this unit, the student will be able to:

Demonstrate proper techniques for staining, coverslipping, receipt, labeling and filing of gyn and non-gyn slides.

Demonstrate proper techniques for liquid based preparation (Thin Prep), centrifugation, and smearing of the preparation of non-gyn material.

Discuss the Saccomanno technique and ways in which the material may vary in appearance from that which is prepared by the pick and smear technique.

Discuss ways in which ThinPrep material may vary from smeared slides.

Discuss proper use and care of the cytospin, centrifuge, balance scales, biologic hood, fume hood, coverslipping hood, and Thin Prep processor.

Demonstrate proper procedures for preparing the different solutions used in the laboratory.

Discuss the steps in the staining procedure and the theory involved in each step.

Discuss destaining procedure.

Discuss various special stains and their application in cytology including:
H and E, Giemsa, Nile Blue Sulfate, PAS, Rakoff, Toluidine Blue, Acetic-Ocein, GMS, Oil Red O, Mucicarmine, Biebrich-Scarlet, India Ink, Cresyl-violet, Feulgen, Fontana-Mason, Wright's, Gram, Prussian Blue, Shorr

Identify the special stains used to identify:
Fungi, hemosiderin, melanin, mucus, glycogen, Donovan bodies, cross striations in muscle

Recognize the basic steps of the immunoperoxidase technique.

Identify the principles of fixation and identify proper use of histologic and cytologic fixative including:
Ethanol, Carnoy's, formalin, air drying

Identify the various coating fixative used in cytology.

Describe the effects of air drying on cells.

Identify the basic types and benefits of specimen preparation procedures including:
Smears, filtration, cell block, cytocentrifugation, Thin Prep, and washing techniques.
Identify the three main objectives of the Papanicolaou staining procedure and differentiate between regressive and progressive.

Be able to calculate the volumes for preparing the various percentage solutions of alcohol and water.

Identify the purpose of mounting media.

Identify the possible causes of air bubbles, cornflake artifact, and cloudiness on the slides and indicate how these problems are corrected or avoided.

Identify 3 methods for removing coverslips from the slides.

Discuss the consequences of water in the xylene and ways to eliminate the problem.

Recognize and implement when appropriate, the principles of laboratory safety as they apply to the cytology laboratory including:

Eye wash, safety shower, fire extinguisher, chemical spill kit, MSDS, chemical toxicity, first aid, infectious material, aerosols, safety glasses, pipetting, washing of hands, storage of chemicals, disinfection procedures, lab coats, face mask, gloves, fume hood, biologic hood

Describe the dangers and necessary precautions for handling infectious material.

Identify emergency procedures for accidents in the laboratory including:

Chemical splash to the eye

Small cut on finger from a specimen bottle

Explain the steps involved in the exposure control plan.

Topic: Laboratory Operations

Objectives: This unit is designed to familiarize the student with the basics of laboratory operations to include quality assurance and quality control, cytopreparation techniques, safety and infection control, and compliance.

Performance Objectives: Upon completion of this unit, the student will be able to:

Describe the main forms of quality assurance and quality control used in the cytology laboratory to include 5 year look back, cyto/histo correlations, 10% negative and high risk rescreen, ASCUS:SIL ratio, CT/pathologist correlations, and CT/laboratory correlations.

Discuss the principles of collection, processing, and special techniques used in the processing laboratory.

Describe and be able to perform the routine cytopreparation of both conventional and liquid based (Thin Prep) gyn specimens and non-gyn specimens to include genitourinary, CSF, GI, respiratory, body cavity fluids, and miscellaneous (eye, skin, etc.) as well as FNA specimens from all body sites.

Know the basic principles involved in the cytopreparation of Sure Path specimens.

Understand the basic steps in troubleshooting laboratory processing and staining problems including common staining problems and how to correct them.

Describe and be able to perform the routine fixation and staining of specimens as listed above.

Describe the major sources of safety hazards in the cytology laboratory and list ways to ensure that the dangers are eliminated or reduced.

Describe the uses of personal protective equipment and how it relates to Universal Precaution standards.

Discuss the issue of compliance specifically as it relates to CLIA'88, HCFA, CAP, JCAHO, HIPAA, and other regulatory agencies.

Discuss the proper selection of testing and cytopreparation for a variety of specimens and disease processes.

Be able to discuss specimen acceptability issues and corrective actions.

Discuss the numerous causes of discrepant test results (patient and laboratory).
Understand the various ethical issues confronting the cytotechnologists in the laboratory.

Be able to determine from data given, the ASUCS:SIL ratio of a laboratory.

Discuss how one would introduce, investigate, and implement new procedures and technologies.

Discuss the evaluation procedure for new instrumentation.

Discuss the proper equipment maintenance procedures for equipment.

Be able to write a technical procedure following accepted protocols (NCCLS).

Understand and be able to calculate specificity/sensitivity data given appropriate information.

Understand management theory, economic impact, and management functions to include establishing technical and administrative procedures, quality control and assurance procedures, standards of practice, safety and waste management procedures, information management, and cost effectiveness.

Be able to communicate with fellow workers, other laboratory staff, physicians, clients, and patients in a professional, ethical manner, adhering to all regulations and requirements, e.g. HIPAA.

Topic: The Respiratory Tract

Objectives: This unit is designed to acquaint the student with the anatomy, histology, and cytology of the lung as it relates to normal, benign, and malignant conditions of the lung.

Performance Objectives: Upon completion of this unit, the student will be able to: Identify non-cellular material in cytologic specimens.

Identify the etiologic agent and/or its cytologic morphology in viral, fungal, parasitic, and protozoan diseases.

Identify the cellular changes associated with asthma, heat trauma, and squamous metaplasia and other benign conditions of the respiratory tract.

Discuss pneumoconioses, the agents involved, and jobs which are at risk for these diseases.

Discuss the clinical implications of immunosuppressive therapy and/or HIV/AIDS as it relates to viral, fungal, parasitic, and protozoan diseases in the lung.

Discuss the origin and cytologic features of squamous metaplasia as it relates to the morphogenesis of squamous cell carcinoma of the lung.

Describe the gross anatomy of the lung, illustrating the histology of each structure.

Describe and label the anatomy of the respiratory tract, illustrating the normal histology of each structure.

Describe the gross anatomy of the oral cavity and nasopharynx, illustrating the histology of each.

Describe and microscopically identify the cytologic features of normal pulmonary specimens.

Discuss the clinical aspects of pulmonary carcinoma. Discuss the classification of primary lung carcinoma.

Discuss the morphogenesis of squamous cell carcinoma, including the earliest cytologic changes, carcinoma-in-situ, and transition to invasive carcinoma.

Discuss the cytologic and histologic presentation of primary adenocarcinoma, primary squamous cell carcinoma, primary large cell carcinoma, primary small cell carcinoma, primary mucoepidermoid carcinoma, and adenoid cystic carcinoma and other rare tumors of the lung.

Discuss the cytologic and histologic presentation of non-epithelial malignancies.

Discuss the cytology of tumors metastatic to the lung.

Discuss the treatment of pulmonary carcinoma.

Discuss the presentation of paraneoplastic syndromes.

Discuss the various techniques for obtaining specimens from the lung and their advantage and disadvantages.

Identify predominant cell types of the various pulmonary specimens and the adequacy criteria for each type of specimen.

Identify any special stains useful in the diagnosis of infectious agents.

Topic: Reticulo-Endothelial Malignancy

Objectives: This unit is designed to acquaint the student with reticulo-endothelial malignancies and their cytologic presentation in various kinds of specimens.

Performance Objectives: Upon completion of this unit, the student will be able to:

Discuss the morphogenesis of the various kinds of mature red and white blood cells from the stem cell.

Define the various types of lymphomas and leukemias with relation to the types of abnormal cells encountered.

Identify lymphomas and leukemias when present in specimens from various body sites.
Discuss mean age at detection, environmental risk factors, and survival rates of the various types of reticulo-endothelial malignancies.

Differentiate malignant specimens from inflammatory or reactive specimens.

Topic: Cytology of Body Fluid

Objectives: This unit is designed to familiarize the student with the cytologic aspects pertaining to specimens obtained from body cavities. This will include normal cytology as well as changes associated with malignancy and other disease processes.

Performance Objectives: Upon completion of this unit the student will be able to:

Describe the anatomy and histology of the major body cavities (pleural, peritoneal, and pericardial) and the procedure used to obtain fluids from each.

Define terms relative to the body cavities and the description of the fluids obtained.

Describe the changes in the body cavities under pathologic conditions.

Differentiate between transudates and exudates and identify conditions associated with each.

Discuss disease processes that affect the body cavities.

List changes of benign mesothelial cells resulting from pathologic conditions.

Identify special staining procedures that are used to differentiate mesothelial cells.

Identify inflammatory cells encountered in body cavity fluids.

Describe the cellular changes associated with primary and metastatic malignancies found in the body cavities.

Describe the criteria for differentiation of tumor type for metastatic carcinoma of the body cavities.

Discuss the relative frequency of different metastatic tumors with relation to the sex of the patient and the site of the effusions.

Discuss the application of cytology to the study of synovial fluid.

Topic: Cytology of Cerebral Spinal Fluid and Miscellaneous Fluids

Objectives: This unit is designed to familiarize the student with the cytologic aspects of fluid specimens obtained from the central nervous system, and other miscellaneous body sites.

Performance Objectives: Upon completion of this unit the student should be able to:

Discuss the anatomic and physiologic aspects of the central nervous system.

Describe the cytologic criteria and biological significance of the primary tumors of the central nervous system.

Describe the normal cytologic appearance of synovial fluid, hydrocele fluid, and amniotic fluid.

Discuss the benign conditions of synovial fluid including villonodular synovitis, rheumatoid arthritis, and gout.

Describe the process of determining the fetal sex and maturity in amniotic fluid.

Describe the anatomy and histology of the eye and adnexa.

Describe the cytologic changes in viral infections of the eye and adnexa.

Identify the cellular changes consistent with the primary tumors of the eye and adnexa, including retinoblastoma, squamous cell carcinoma, and melanoma.

Topic: Gastrointestinal Tract

Objectives: This unit is designed to introduce the student to the physiology and gross and microscopic anatomy of the gastrointestinal tract, with emphasis on the esophagus and stomach. The cells normally exfoliated from these organs are introduced, as well as the cytologic changes resulting from neoplastic tumors, both benign and malignant.

Performance Objectives: Upon completion of this unit the student will be able to:

Identify and describe the function of the organs of the gastrointestinal tract. List the epithelial linings of these organs.

Identify the structures of the stomach, identify the cells in each area, and display knowledge of the functions of these cells.

List and identify the cells normally found in gastric specimens.

Describe and recognize microscopically cells shed from benign lesions of the stomach, including inflammation and repair.

Describe and identify cells from malignant tumors of the stomach, including uncommon malignancies.

Discuss variations in specimens due to collection methods, including EUS specimens.

Describe the normal epithelium of the esophagus.

Recognize cells shed from metaplastic, inflammatory, and benign neoplastic lesions of the esophagus.

Identify cells from malignant lesions of the esophagus.

Discuss the anatomy and physiology of the pancreas, biliary ducts, large and small intestines, rectum, and anus.

Topic: The Urinary Tract

Objectives: This unit is designed to familiarize the student with the cytologic aspects of specimens obtained from the urinary tract. This will include normal cytology, changes associated with disease, chemotherapy, radiation and malignancy.

Performance Objectives: Upon completion of this unit the student should be able to:

Recognize the gross anatomy of the urinary tract illustrating the histology of each structure.

Describe the normal transitional epithelium of the urinary tract.

Identify the cellular components of normal urine, including voided and catheterized specimens.

Identify inflammatory processes and their results in the cellular sample.

Recognize cytologic changes due to therapy including radiation, chemotherapy, cyclophosphamide, aspirin, phenacetine, and other alkylation agents.

Identify benign tumors of the lower urinary tract, relating their histologic and cytologic appearance.

Discuss the morphogenesis of epidermoid carcinoma, including the earliest cytologic changes, carcinoma-in-situ and transition to invasive carcinoma.

Discuss the histologic and cytologic appearance of early malignant lesion (CIS).

Discuss the histologic and cytologic appearance of invasive epidermoid carcinoma of the lower urinary tract.

Discuss the histologic and cytologic appearance of carcinoma of the renal pelvis, ureters and urethra.

Discuss the cytologic appearance of recurrent cancers, including those treated by radiation.

Recognize metastatic tumors to the bladder.

Describe the cytologic features of malignant tumors of renal parenchyma.

Discuss other tumors of the male genital tract.

Discuss the effect of treatment with estrogens on urinary sediment.

Discuss the study of urinary sediment in other disorders, including cytomegalic inclusion disease, lead poisoning, and other nonspecific cytoplasmic inclusions.

Discuss collection and processing of urine and prostatic secretions for cytologic examinations.

Discuss the histologic and cytologic appearance of carcinoma of the prostate and seminal vesicles.

Topic: Fine Needle Aspiration

Objectives: This unit is designed to acquaint the student with both the procedure of fine needle aspiration and the various common cytologic presentations in the most common sites in which fine needle aspiration is practiced.

Performance Objectives: Upon completion of this unit, the student will:

Discuss the theory of fine needle aspiration, its indications and contraindications, its common complications, and the factors influencing its desirability as a diagnostic tool.

Identify malignant and benign preparations of fine needle aspirations in those sites already studied (i.e. breast, lymph node, etc.).

Identify common malignancies in fine needle aspirations from the thyroid, soft tissue tumors, liver, pancreas, head and neck lesions, bone aspirations, and other miscellaneous sites.

Identify common benign or non-neoplastic lesions in the above sites.

Describe the normal histology of each of the above named sites.

Understand the basic technique of FNA and the needed equipment.

Describe the features of a diagnostic (satisfactory for evaluation) aspiration from each of the above sites.

Topic: Literature Review Paper

Objectives: this unit is designed to give the student practice in using the professional journals and the library resources to research a topic of interest in cytology.

Performance Objectives: Upon completion of this unit the student will:

Hand in a research paper on a topic of interest in cytology. This paper will utilize at least seven current articles and will demonstrate both appropriate organization and scholarship.

Topic: Understanding Scientific Research

Objectives: The student will learn the process involved in scientific research and gain a basic understanding off some of the statistical terms used in the literature of cytology.

Performance Objectives: Upon completion of this unit the student will:

The student will be able to understand and apply the terms correlation coefficient, mean, standard deviation, p value, random selection, validity, and null and alternative hypothesis.

The student will be able to read and critically evaluate scientific papers with consideration of the principles of scientific research and research design.

The student will be able to identify the various sub-sections of a scientific paper.

The student will be able to identify the hypothesis of a scientific paper, and evaluate the evidence given to support that hypothesis.

The student will be able to evaluate the statistical evidence given in a paper not previously discussed and be able to draw conclusions based on the data.

Topic: Advanced Topics in Cytotechnology

Objectives: The student will learn the variety of ancillary techniques used in cytology and be able to describe their general uses and methodology.

Performance Objectives: Upon completion of this unit the student will be able to

Discuss the uses, methodology, and principles of flow cytometry, immunocytochemistry, cytogenetics, molecular technologies, HPV testing, and image analysis.

Evaluate a cytology case which utilizes an ancillary technique, describe how the methodology worked, describe how the technique added to the diagnosis, and apply this knowledge to other cases.

Describe the uses of telepathology in cytopathology and surgical pathology.

CLINICAL AFFILIATION SITES

Three clinical affiliation sites have been added to the student's clinical experience. These sites are MAWD Pathology, Physician's Reference Laboratory, and Truman Medical Center. These sites are located at 2750 Clay Edwards Drive, Suite 420, North Kansas City, Mo. 64116; 7800 W. 110th, Overland Park, Kansas; and at 2301 Holmes, Kansas City, Mo., respectively.

These sites will not be utilized until the second semester of the student's studies. Each student will be assigned 1/2 semesters rotation in each of the sites so that all students may benefit from this clinical experience. It is the student's responsibility to provide his or her own transportation to the site, to abide by the clinical site's regulations, hours of operation, and behavioral guidelines. It is most important that the student make every effort to avoid absence at the clinical site, however, if the student must be absent, please have the courtesy to notify BOTH the clinical site and the program as soon as possible. The opportunity of a clinical rotation is a privilege which must not be taken for granted nor abused. Failure to abide by the site's behavioral expectations may result in a student's being withdrawn from the site and would be appropriately reflected on the student's academic progress. The results of the student's clinical progress in the examination of the microscopic slides at the clinical site will be computed into the student's score, as are the clinical scores from the KU cytology laboratory.

Your rotation slot is an opportunity for you to observe the workings of a reference laboratory as well as providing an opportunity for them to evaluate you, perhaps as a prospective employee. Keep this in mind and treat your clinical instructors with all due respect. They have a great deal to teach you!

MAWD Pathology Group	Truman Medical Center	Physician's Reference Lab	University of Kansas Medical Center
2750 Clay Edwards Dr. North Kansas City, MO 64116	2301 Holmes Kansas City, MO 64108	7900 W. 110" Overland Park, KS 66210	3901 Rainbow Blvd., Kansas City, KS 66160
816-936-8110	816-404-0598	913-339-0368	913-588-1175
FAX 816-241-6531	FAX 816-556-3942	FAX 913-338-4245	FAX 913-588-1160
Active 10-11	Active 10-11	Active 10-11	Active 10-11
Jeff Wilson,BS, CT(ASCP) Supervisor	Audrey Lammers,CT(ASCP)	Kathy Goudy, BS,CT(ASCP) Supervisor	Heather Gallagher- Nelson, BS, CT(ASCP) Supervisor

Rotation Schedule for 2011/12

	Grayson Ediger	David Kress	Brendan Handy	Tommy Turpin
1 st Spring 1/3/12 – 3/2/12 9 weeks	TMC	PRL	MAWD	KU
2 nd Spring 3/5/12 – 5/4/12 9 weeks	PRL	TMC	KU	MAWD
1 st Summer 5/29/12 – 6/19/12 3.5 weeks	MAWD	KU	TMC	PRL
2 nd Summer 6/21/12 – 7/13/12 3.5 weeks	KU	MAWD	PRL	TMC

NOTE: There is a spring break from 5/14– 5/25 and breaks for reviewing from 5/7 - 5/11 and 7/16 - 7/20. Also, rotation is omitted the week of 1/30 – 2/3. Spring semester students will rotate Tues. and Thurs.; summer semester students will rotate Tues. and Thurs. as well due to additional molecular classes

You MUST call BOTH the program (913) 588-1179 AND the rotation site if you are going to be unexpectedly absent. The phone numbers are as follows:

Truman:	Audrey Lammers	(816) 404-0604
MAWD:	Jeff Wilson	(816) 241-3200
PRL:	Kathy Goudy	(913) 339-0368

You must follow all restrictions at each rotation site regarding dress, arrivals times, etc. Note that Truman would prefer that you remain at the site for the entire day, even if you have completed your quota. Truman also expects that you will attend any and all continuing education opportunities while present at the site. They have an extremely diverse and interesting teaching file and you should take the opportunity to view these if you have any "down time" while at the site. If you are planning to go to a doctor's appointment or whatever, please have the courtesy to notify the rotation site as soon as you know your plans, instead of the day before.

The rotation sites are performing a service for our program and you should be very respectful of their time and expertise. You should consider the rotations as a "pre-interview" for a possible job situation, if not at this particular site, then elsewhere in the city. You would want all of the sites to be able to highly recommend you for work. Also, remember that often the labs need to get a certain amount of work completed and you should try not to interfere by talking excessively or whatever. Have fun at your rotations and learn a lot! I think you will find everyone very helpful.

Marilee

Departmental Guidelines for Circumstances When a Student's Status is in Jeopardy

Each department defines – through the components of its written policies and the written statements of academic and non-academic misconduct, the expectations of that department's students. The department monitors each student's performance relative to these expectations.

Should a student jeopardize his/her status in the department by not performing at the level expected and defined by the department, the student will be notified in writing that his/her student status is in jeopardy. This notification will take place within five (5) working days from the time the Department first becomes aware of the circumstances.

Should this notification be necessary, the department will appoint an appropriate faculty advisor to be available to assist a student who is notified of jeopardized status.

This official written notification shall include the following information:

- a) the reason the student is being so notified
- b) the potential consequences of the circumstances
- c) the time frame in which the student may attempt to rectify the situation
- d) the steps necessary to rectify the situation
- e) the name of the faculty advisor appointed to assist the student
- f) the consequences of the successful or unsuccessful attempt to resolve the matter in
- g) the specified time frame*

*At the discretion of the department, an extension may be granted. Documentation of this arrangement must be attached to the original notification.

Explanation of Student Evaluation

The number of slides to be screened by the student will be gradually increased according to the following schedule:

Oct. 10 (2/hour)	March 35/45 (7/hour)
Nov. 15 (3/hour)	April 40/52 (8/hour)
Dec. 20(4/hour)	May 45/58 (9/hour)
Jan. 25/32 (5/hour)	June 50/65 (10/hour)
Feb. 30/39 (6 hour)	July 50/65 (10/hour)

One Gyn slide is equal to one point; one non-gyn slide is equal to two points. Student work will be evaluated daily and reviewed monthly. At time when the student is responsible for laboratory duties, there will be no daily quota. Other adjustments in special circumstances will be made at the discretion of the teaching supervisor and must be approved by same.

Demerit points: Demerit points are subtracted from the total number of points accumulated by the student during the day.

1. Diagnostic mistakes: Failure to recognize or overcalling a negative smear.

ASCUS	2 points
HPV/Slight Dysplasia –LGSIL	5 points
Moderate Dysplasia-HGSIL	10 points
Sev. Dysplasia/CIS-HGSIL	15 points
False Positive/False Neg. - CA20	points
Insufficient dotting	2-3 points at discretion of instructor
Endometrials on Postmenopausal pt.	10 points
Mixing up slides/reports	10 points

2. All errors in the following categories: 1 points

Not designated or overcalled Hyperkeratosis
Herpes
Omitting diagnosis
Parakeratosis

3. All errors in the following categories: 1 point

Trichomonas	Inflammation
Candida	Follicular Cervicitis
Leptothrix	Eosinophils/plasma cells when abundant
Repair	Endometrial cells when not postmenopausal
Blood	CMV

4. Mistakes regarding benign cell patterns and hormonal evaluation: 1 point

Failure to recognize inconsistent hormonal pattern and/or incorrect MI
Postpartum cell pattern including decidua, trophoblasts, and decidual reactions

Atrophy Cytolysis

Degenerative changes and drying effect

Radiation and chemotherapy effect

Failure to check for pertinent history

Failure to recognize inadequate specimen (no endocervical material, etc.)

Clerical errors

Consensus Guidelines for Diagnoses

HK 2 groups of 10 or more cells OR
scattered all over (at least 20 cells) of yellow or orange cells (ghost nuclei)

Atrophy
Predominantly parabasal (70% or more)
(- no superficial cells) in a postmenopausal pt.

Unsat for Blood
If you would call Unsat for blood, Rerun (IF Thin Prep)
If you would call QI for blood, Rerun if high risk, if few weird cells, or use your best judgment

Cytolysis
At least 60% naked nuclei (lysed cells) Call if QI for cytolysis (75% or more)

SVF Coccobacilli or cocci in background and "clue cells" all over Not if just a few cells or one small area affected

Estrogen Effect
If at least 20% superficial cells in a patient 60 or older IF inconsistent with age and/or history of patient

Inflammatory cell changes
Not called frequently unless changes might be questioned as neoplastic on review

Inflammation
If covers at least 30% of slide (not enough for QI) and in several areas (not just one or two areas) on slide

Repair
At least one to two good groups of 6-7 cells with classic criteria (nucleoli, hypochromasia, ribboning, enlarged nuclei and cytoplasm)

Reactive Eccs
If any question vs. AGUS or if quite a number of groups

Mixed Hormonal Pattern
All 3 cell types - Not in postpartum or Depo UNLESS can't find certain eccs. In postmenopausal pt. 65 or older.

Eccs
Call if they are seen, even in pregnant or postmenopausal ladies but must be good, well preserved columnar cells

ASCUS
Cells with classic N/C ratio (1/3 diameter) but not enough cells to call LG (Like at least 3 or 4 cells BUT if classic koilocyte, call LG if even one or two)
OR
N/C ratio not high enough for classic LG (1/4 diameter or so depending) 10 cells or so NOT just a couple

ASC-H

Significant diagnosis but rare (count as LGSIL for student grading)

No more ASC questions for students in the summer

PK At least 1-2 plaques (not just a couple of cells) Students should specify type of HGSIL (mod, severe, CIS)

Students must specify type of HGSIL (mod, severe, CIS)

Points Off Table for Screening Errors

Failure to recognize or overcalling/undercalling

Correct Answer →	NEG	ASCUS	LGSIL	HGSIL – MOD	HGSIL-SEV/ CIS	CA
Student Answer						
NEG ↓	0	2	5	10	15	20
ASCUS	2	0	2	8	13	18
LGSIL	5	2	0	5	10	15
HGSIL – MOD	10	8	5	0	5	10
HGSIL-SEV/CIS	15	13	10	5	0	5
CA	20	18	15	10	5	0

Non-Gyn Specimen Grading

1. Failure to recognize or overcalling malignancy when specimen is benign:
75% to 100% of possible points (i.e. if a 4 slide sputum is called benign but is malignant, then of 8 points, the student misses 6-8 points at the discretion of the instructor)
2. Miscalling the type of malignancy:
0% to 25% of possible points (i.e. if a 4 slide sputum is called malignant squamous (cell, but is adenocarcinoma, of 8 possible points, the student misses 0-2 points at the discretion of the instructor)
3. Miscalling the benign process:
10%-25% of the possible points (i.e. if a 4 slide sputum is called squamous metaplasia but is negative or contains reserve cell hyperplasia, of 8 possible points, the student misses 1-2 points at the discretion of the instructor)
4. Missing or overcalling microbiologic or other significant non-neoplastic findings:
10-25% of the possible points (i.e. if a 4 slide sputum is called herpes but is not, or contains Charcot-Leyden crystals which are missed, of 8 possible points, the student misses 1-2 at the discretion of the instructor)
5. Missing or overcalling premalignant conditions:
25% - 50% of the possible points (i.e. if a 4 slide sputum is called negative but is atypical squamous metaplasia, then of 8 possible points, the student misses 2-4 at the discretion of the instructor)

Formative Professional Development Evaluation

This is the first of two professional development evaluations you will receive. This is given at the beginning of the school year in order to help you receive feedback so that you can work on any areas that may need improvement and so that you can continue to do well in your strong areas. This evaluation will not count directly toward your grade but the next one will.

The reliability of this evaluation is somewhat limited since we have only had you here a short time. So please take this information in the spirit in which it was given: to assist you in identifying areas for improvement so that when you receive your final professional evaluation, (that does count toward your grade) you will excel in all areas.

As we mentioned in the orientation lectures, professional development and behaviors, including your interpersonal relationships, are just as important as your acquiring the knowledge base to practice cytotechnology.

This is an average of all ranking scores from all the cytotechnologists. In some cases, if a person did not feel they had enough information to give you a rank, they left it blank. Thus, the exact numeric score may be based on less than 5 evaluations. In general, 4s and 5s are very good for this point in the semester. If you have somewhat lower scores than this, see what you can do to improve. And remember, being able to listen, hear what may be unwelcome critiques, and respond in a mature and responsible manner is the hallmark of a professional person. This is a skill you will be always grateful to possess.

CYTOTECHNOLOGY PROGRAM
PROFESSIONAL DEVELOPMENT EVALUATION

Objective: Since the day to day work in Cytotechnology is a part of the total educational process, strengths and suggestions for improvement are stressed in order to promote the professional growth of the student.

Name:

Dates of Observation: From _____ To _____

Each criterion is to be rated on a scale from 1-5.

- 5 = Superior
- 4 = Above Average
- 3 = Average
- 2 = Below Average
- 1 = Unacceptable

Cooperativeness:

I. Cooperativeness

- | | | | | | |
|-----------------------------------|---|---|---|---|---|
| A. displays enthusiasm | 5 | 4 | 3 | 2 | 1 |
| B. accepts constructive criticism | 5 | 4 | 3 | 2 | 1 |
| C. follows directions carefully | 5 | 4 | 3 | 2 | 1 |
| D. makes constructive suggestions | 5 | 4 | | | 1 |

II. Work Habits:

- | | | | | | |
|---|---|---|---|---|---|
| A. completes assigned tasks with a minimum of supervision | | | | | |
| B. identifies and solves problems as they arise | 5 | 4 | 3 | 2 | 1 |
| C. asks appropriate questions when in doubt | 5 | 4 | 3 | 2 | 1 |
| D. handles personal and professional frustrations appropriately | 5 | 4 | 3 | 2 | 1 |
| E. budgets time wisely, does not waste time | 5 | 4 | 3 | 2 | 1 |
| F. keeps microscope and working area neat and clean | 5 | 4 | 3 | 2 | 1 |

III. Communication' Skills:

- | | | | | | |
|---|---|---|---|---|---|
| A. communicates effectively with staff and others | 5 | 4 | 3 | 2 | 1 |
| B, presents oral and written reports in appropriate form, content, and manner | 5 | 4 | 3 | 2 | 1 |
| C. participates in conference formats | 5 | 4 | 3 | 2 | 1 |

IV. Responsibility:

- | | | | | | |
|--|---|---|---|---|---|
| A. is on time to class and lab | 5 | 4 | 3 | 2 | 1 |
| B. contacts instructor if absence is necessary | 5 | 4 | 3 | 2 | 1 |

	C.	limits breaks to appropriate length	5	4	3	2	1
	D.	reports out when leaving assigned area	5	4	3	2	1
	E.	completely screens cytologic material	5	4	3	2	1
V.		Interpersonal Relationships:					
	A.	interrelates satisfactorily with peers and staff	5	4	3	2	1
	B.	minimizes and avoids conflicts	5	4	3	2	1
	C.	shows maturity in dealing with personal problems	5	4	3	2	1
VI.		Honesty:					
	A.	makes a diagnosis without help from others	5	4	3	2	1
	B.	admits errors	5	4	3	2	1
	C.	is truthful in relationships with peers and staff	5	4	3	2	1
	D.	does not discuss or reveal answers to fellow students	5	4	3	2	1
VII.		Processing Laboratory					
	A.	is careful to avoid labeling or misidentification errors	5	4	3	2	1
	B.	asks for information if needed	5	4	3	2	1
	C.	has learned routine procedures	5	4	3	2	1
	D.	does not leave work for others	5	4	3	2	1
	E.	follows safety procedures	5	4	3	2	1
	F.	works well with others in lab	5	4	3	2	1

VII. Additional Comments:

A. Were there circumstances which might prejudice your evaluation of this student? Explain.

B. Were there circumstances which might have affected the student's performance? Explain.

C. Please comment on the performance of the student during this time period:

a. general

b. signs of improvement

c. any pertinent suggestions for improvement

Student:

Do you consider this evaluation to be fair?

Comments:

Signature of Student _____ Date _____

Signature of Program Director: _____ Date _____

TO: Prospective Students

A note about professional grooming and dress:

As a pre-professional program within the University of Kansas Hospital, we are obligated to follow the same rules and guidelines of professional grooming and dress as our professional colleagues. Since this is no doubt the first time in your college career that these items have been a part of your expected behavior, we are notifying you of these requirements in advance as you consider your upcoming professional year.

Our program adheres to the policy of the University of Kansas Hospital (#700 – Grooming and Dress Standards). This document is attached for your information. A few additional comments should be noted:

1. Due to infection control issues, the use of artificial nails or extenders in the laboratory is not permitted.
2. Hair styles should be neatly groomed and conservative, including mustaches and beards.
3. “Use of jewelry should be minimal and conservative.” This means that eyebrow, nose, lip, or other piercing type jewelry is not allowed, with the exception of conservative earrings.
4. Unacceptable clothing: Athletic shoes and T-shirts in good condition may be worn but shirts with advertising or objectionable language may not. Blue jeans, sweat clothing, shorts, etc. as listed may not be worn. Clothing with holes is also inappropriate.
5. Students may be asked to return home to change clothing if inappropriate choices are made. Repeated inappropriate choices will reflect poorly on the student’s Professional Evaluation, and thus, on their grade.

We appreciate the opportunity to share these items of concern with you. When on rotation at the various laboratory sites, you should inquire about appropriate clothing choices in each facility.

Sincerely,

Marilee Means, Ph.D.
Program Director

KU Corporate Policy and Procedures
700 – Grooming and Dress Standards

Our Personal Hygiene/Grooming Guidelines for All Employees:

- Hair should be clean, and the color should be natural looking. Hair should be neatly styled and pulled away from the face when with patients.
- Facial hair should be neatly styled and groomed.
- Fragrances should be kept to a minimum and may be banned, if necessary, due to allergic reactions.
- Make-up should be natural looking.
- Jewelry should be kept to a minimum, and may be deemed unsafe for certain positions. Non-traditional body piercings/jewelry typically worn on the tongue, lips, eyebrow and nose may not be worn while at work.
- Hands and fingernails should be well groomed. Fingernail polish must be conservative.
- Employees must adhere to the hospital's hand hygiene policy and infection control policies.
- Tattoos are to be covered while at work, if possible, and should not be offensive in nature.
- Dark glasses may not be worn while at work, except for medical reasons.
- Undergarments must be covered/not visible.
- Personal head coverings (unless part of a uniform) are not to be worn while at work.

The effectiveness of this policy relies on employees using their best judgment in matters of personal attire. If you are unsure about the appropriateness of a clothing item, consult with your immediate supervisor before wearing the item. A manager or supervisor may ask an inappropriately dressed employee to clock out and return to work appropriately dressed. These standards are meant to address the minimum requirements for hospital employees. Your department director reserves the right to determine additional standards based upon individual position requirements. Requests for accommodations for medical or religious reasons should be addressed to your supervisor. Questions regarding this policy should be addressed to your supervisor or Hospital Human Resources/Employee Relations.