

**UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY
SCHOOL OF HEALTH RELATED PROFESSIONS
DEPARTMENT OF CLINICAL LABORATORY SCIENCES**

**CYTOTECHNOLOGY PROGRAM
APPLICATION PACKET**

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<http://www.shrp.umdnj.edu/programs/cls/index.htm>

CYTOTECHNOLOGY

WHO ARE CYTOTECHNOLOGISTS?

Cytotechnologists are health professionals who practice diagnostic cytology, the examination of cells removed from all body sites to determine if cancer or benign diseases are present. Cytotechnologists work with pathologists to detect and interpret microscopic abnormalities and to correlate cytologic findings with clinical information before a diagnosis is rendered.

The Cytotechnologist makes contributions in the following areas:

- *Detecting cellular changes with the use of microscope to diagnose a disease or a condition.
- *Preparing special stains and using adjunct technologies such as Flow Cytometry and automated screening devices.
- *Assisting physicians with procedures like FNA and interfacing with them in determining diagnosis of diseases.
- *Supervising and teaching other laboratory personnel.
- *Monitoring the quality and validity of reports through quality assurance programs.

As a result of the findings of the Cytotechnologists, the physician is frequently able to diagnose and treat cancer early before symptoms occur.

CAREER OPPORTUNITIES

The use of diagnostic cytology as a tool in the early detection of cancer has increased throughout the world. Employment opportunities are available to the Cytotechnologist in:

- *Clinical laboratories of hospital
- *Commercial and industrial laboratories
- *Teaching institutions

With improved methods of early detection and diagnosis of cancer, as well as an increased incidence of the disease, the Cytotechnologist is ensured of many employment opportunities with a good salary, professional mobility, and challenging work. Presently the demand for Cytotechnologists skilled in the examination of specimens for tumor cells and benign diseases exceeds the number of qualified personnel. Upward mobility and career advancement opportunities exist through professional experience or pursuit of advanced degrees.

CYTOTECHNOLOGY PROGRAM

The University of Medicine and Dentistry of New Jersey (UMDNJ), School of Health Related Professions, in collaboration with ten other academic institutions offer a Cytotechnology Program, a “full time program” which leads to a B.S. in Clinical Laboratory Sciences. The collaborating colleges and universities include:

Bloomfield College, Bloomfield, NJ
Caldwell College, Caldwell, NJ
College of St. Elizabeth, Convent Station, NJ
Fairleigh Dickinson University, Madison and Teaneck, NJ
Felician College, Lodi, NJ
Georgian Court College, Lakewood, NJ
New Jersey City University, Jersey City, NJ
Monmouth University, West Long Branch, NJ
Ramapo College of New Jersey, Mahwah, NJ
Rutgers University, Newark, NJ
Saint Peters College, Jersey City, NJ

The Cytotechnology program is the only program currently available in New Jersey; fully accredited by the Commission on Accreditation of Allied Health Education Professions (CAAHEP) and by the American Medical Association, upon recommendation of the American Society of Cytopathology.

CYTOTECHNOLOGY CURRICULUM

The curriculum consists of preprofessional and professional components. It is designed to provide a foundation in general education, basic sciences, and professional coursework that would prepare the graduates for their chosen profession and ensure eligibility for the national certification examination.

PREPROFESSIONAL COMPONENT

The preprofessional component of the curriculum is three years in duration (6 semesters) and consists of coursework in general education and basic sciences. Students complete preprofessional component requirements at one of the ten academic institutions affiliated with UMDNJ which are listed above.

PROFESSIONAL COMPONENT

The Cytotechnology professional studies consist of a 12-month curriculum including discipline specific and interdisciplinary course work. The discipline specific course work provides the theoretical and practical experiences in all the major areas of Cytotechnology, namely, the female genital tract, respiratory and urinary tract, body cavity fluids, fine needle aspiration, and cyto processing of specimens. Additional experiences are provided in laboratory management, cytogenetics and independent study projects.

Classroom instructions, integrated with student laboratory activities, provide the foundation for student clinical practice at affiliated clinical laboratories.

The following institutions are affiliated with UMDNJ-SHRP to provide clinical practice for the Cytotechnology major:

- UMDNJ-University Hospital, Newark, NJ
- Newark Beth Israel Medical Center, Newark, NJ
- Morristown Memorial Hospital, Morristown, NJ
- Quest Diagnostics, Inc. Teterboro, NJ
- Somerset Medical Center, Somerville, NJ
- UMDNJ-Robert Wood Johnson Medical Center,
New Brunswick, NJ
- Laboratory Corporation of America, Raritan, NJ
- Hackensack Medical Center, Hackensack, NJ
- Monmouth Medical Center, Monmouth, NJ
- St. Barnabas Medical Center, Livingston, NJ
- Valley Hospital, Ridgewood, NJ

Students within the Cytotechnology program must provide their own transportation when assigned to any of the clinical sites listed above. The sites are located within a 50-mile radius of the Scotch Plains Campus.

Professional component courses at UMDNJ commence annually in September with a maximum enrollment of ten students.

ACCREDITATION: The Cytotechnology Program is accredited by the Commission on Accreditation of Allied Health Education Professions (CAAHEP).

PROFESSIONAL COMPONENT COSTS AND FINANCIAL ASSISTANCE

TUITION & FEES: The tuition and fees for New Jersey are as follows:

Semester	Tuition	Fees
Fall (2007)	\$3810.00	\$150
Spring (2008)	\$4572.00	\$180
Summer (2008)	\$1778.00	\$70
TOTAL	\$9600.00	\$400

The tuition rate is \$240 per credit with a \$10 per credit student fee. The tuition costs for out-of-state residents is one hundred fifty percent of the in-state rate. Tuition and fees are subject to change without notice.

PARKING: Annual parking cost for the Newark & Scotch Plains campus is \$150.

BOOKS: Approximate cost for books is \$800.

COMMENCEMENT FEE: \$60.

STUDENT HEALTH SERVICE: Annual Cost \$300.

PROFESSIONAL COMPONENT COURSE SEQUENCE

Summer

CYTO4005	Histology*	3
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Subtotal 3

Fall – First Semester

<u>Course#</u>	<u>Course Title</u>	<u>Credit</u>
CYTO4110	Gynecologic Cytology	4
CYTO4120	Gynecologic Cytology Lab	4
CYTO 4130	Fine Needle Aspiration Cytology	1
CYTO4169	Clinical Practicum I	2
CYTO4289	Cytoprep Techniques I	1
CYTO4350	Cytogenetics	1
CYTO4389	Cytoprep Techniques II	2

Subtotal 15

Spring – Second Semester

MLSC4319	Advanced Practice Skills	2
CYTO4209	Respiratory Cytology	3
CYTO4220	Fine Needle Aspiration Cytology of the Thyroid	2
CYTO4239	Urinary Cytology	2
CYTO4249	Body Fluid Cytology	3
CYTO4369	Clinical Practicum II	2
CYTO4370	Independent Study	2
IDST4390	Gastrointestinal Cytology	2

Subtotal 18

Summer – Third Semester

CYTO4469	Clinical Practicum III	7
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Subtotal 7

Total 43

*If so indicated, the course may be taken at another college.

FINANCIAL ASSISTANCE:

The UMDNJ offers a complete range of financial aid options. To obtain information about financial aid contact the Financial Aid Office, University of Medicine and Dentistry of New Jersey; Interims Building #12, Room 1208; 30 Bergen Street, Newark, New Jersey 07107-3007; (973) 972-4376.

PREPROFESSIONAL COMPONENT ADMISSION REQUIREMENTS

Applicants from affiliated academic institutions seeking admission to the professional component offered by UMDNJ-SHRP must meet the following requirements:

- 1) Completion of 90-105 semester hours of education at one of the affiliated academic institutions, including the required basic science courses listed below. A list of specific basic science and other courses which meet these requirements can be obtained by consulting the campus advisor for clinical laboratory sciences at the affiliated academic institution (a list is provided on page 9 of this packet)

	<u>Credit Hours</u>
Cell Biology	3-4
Anatomy and Physiology	8
Microbiology	3
General Chemistry	8
Organic Chemistry	3-4
Biochemistry	3-4
Statistics	3
Precalculus/Calculus	3
Histology	3
(Can be completed at academic affiliate or UMDNJ)	

In addition, the following science courses are recommended:

Immunology	3-4
Genetics	4
Computer Science	3

- 2) Achievement of an overall grade point average of 2.75 (4.0=A) and grades of C or better in all required sciences courses.

Applicants with a baccalaureate degree will be considered, if space is available, provided they meet the following requirements.

- 1) Completion of the same basic science requirements listed above. Survey of courses in these sciences do not meet the requirements.
- 2) Achievement of an overall grade point average of 2.75 (4.0=A) and grades of C or better in all required courses.
- 3) If the baccalaureate degree is from a foreign country, then it must be evaluated as equivalent with a baccalaureate degree from the United States.

- 4) Applicants whose native language is not English must achieve a minimum score of 550 on the TOEFL examination (213, computer based) or successfully complete an English Composition course which may be substituted with the Program Director's approval.
- 5) A Personal Interview

APPLICATION PROCEDURES

Applicants from affiliated academic institutions must submit the following materials to the UMDNJ-SHRP Office of Academic and Student Services.

- 1) UMDNJ-SHRP application form and application fee (\$50.00).
- 2) Official transcript(s) from all colleges and universities attended. Transcripts must be mailed directly to the UMDNJ-SHRP Office of Academic and Student Services by the college or university attended; **student or hand-carried copies are not considered official.**
- 3) List of courses in progress and/or planned.

Applicants with a baccalaureate degree must also submit the following, in addition to items 1-3 above:

- 4) Applicants whose baccalaureate degree is not from the United States must submit an official copy of a transcript evaluation. The following evaluation agencies may be contacted; World Education Services, Inc., P.O. Box 745, Old Chelsea Station, New York, New York 10013, (212) 966-6311; Center for Applied Research Evaluation and Education Inc., P.O. Box 20348, Long Beach, California, (310) 430-1105.
- 5) Applicants with a baccalaureate degree whose native language is not English are required to submit the results of the Test of English as a Foreign Language (TOEFL). Information concerning TOEFL may be obtained by contacting: TOEFL/TSE Services, P.O. Box 6151, Princeton, New Jersey 08541-6151, (609) 951-1100.

All materials submitted for application become the property of UMDNJ-SHRP and will not be returned.

The University recognizes the value of diversity and is committed to providing appropriate support for its student body. The University does not discriminate against qualified individuals on the basis of race, creed, sex, national origin or disability. The Essential/Technical Standards for Enrollment in Courses are enclosed at the end of this document. The Disability Compliance Coordinator may be reached at (973) 972-0044.

APPLICATION DEADLINES AND STUDENT ADMISSION

Students are admitted to the professional component Of the Program each August. Admission is competitive and priority admission is available to qualified applicants.

Application to the Cytotechnology Program can be made throughout the year. However, the following deadlines apply for applicants seeking admission to classes beginning August of the following year:

APPLICATION	APPLICATION DEADLINE	ADMISSION DEADLINE
Priority admission	June 15	October 1
Regular admission	October 15	February 15

Applications received beyond these deadlines will be considered if enrollment in the Program is not filled.

Applicants from affiliated academic institutions receive first consideration.

FOR FUTHER INFORMATION

For further information on the Cytotechnology Program, the Cytotechnology profession, or to arrange for a tour of the UMDNJ campus facilities you are encouraged to contact:

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Scotch Plains, NJ 07076
(908) 889-2424 or (973) 972-5578
(908) 889-2425

LABORATORY TESTS AND IMMUNIZATION REQUIREMENTS

Enrollment and continued enrollment of accepted students to UMDNJ-School of Health Related Professions is conditional, based on the results of certain laboratory tests and fulfillment of immunization requirements (See Attached Exhibit I, UMDNJ policy 00-01-25:40:00) in order to determine their ability to perform all essential functions.

Campus advisors at the Following colleges and universities which affiliate with UMDNJ-SHRP in offering the joint BS in CLS degree program may also be contacted for further information on the preprofessional component of the program.

Dr. Maria Vogt
Department of Chemistry
Bloomfield College
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maria_vogt@bloomfield.edu

Professor Cynthia Egli
New Jersey City University
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Jersey City, NJ 07305
201-200-3314
cegli@njcu.edu

Dr. Sook Choi
Dept. Natural & Physical Sciences
Caldwell College
9 Ryerson Avenue
Caldwell, NJ 07006
schoi@caldwell.edu

Dr. Theresa Zielinski
Dept. of Chemistry, Medical
Technology and Physics
Monmouth University
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West Long Branch, NJ 07764
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Dr. Donna Howell
Department of Biology
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Dr. Rena Bacon
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201-529-7727
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Prof. Dale Levine
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Dr. Douglas Morrison
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Dr. Leonard Sciorra
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Jersey City, NJ 07306
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Dr. Michael Gross
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Prof. Marilyn Rubin
Assoc. Director of Allied Health
Fairleigh Dickinson University
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Teaneck, NJ 07666
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COURSE DESCRIPTIONS

CYTO 4110 GYNECOLOGIC CYTOLOGY

4 Credits

Classroom instruction in the anatomy histology, physiology and cell cytology of the female genital tract. Range of topics include inflammation, repair, pre-malignant and malignant cellular changes as well as changes associated with therapeutic and hormonal effects on cells. This course is the prerequisite for all other courses in the cytotechnology curriculum.

CYTO 4120 GYNECOLOGIC CYTOLOGY/GYNECOLOGIC CYTOLOGY LABORATORY 4 Credits

Laboratory instruction in cellular diagnosis of neoplastic and non neoplastic diseases of the female genital tract, as they are discussed in CYTO 4110 (Gynecology Cytology). Students learn to formulate differential diagnosis and solve problems encountered in clinical practice. This course develops the foundation for all laboratory courses in the cytotechnology curriculum.

CYTO 4130 FINE NEEDLE ASPIRATION CYTOLOGY

1 Credit

Classroom presentation of fine needle aspiration techniques used for various organs and body sites, specimen collection and staining procedures, ancillary techniques used to enhance the diagnostic capabilities of aspiration biopsies, and method of reporting aspiration cytology.

CYTO 4169 CLINICAL PRACTICUM I

2 Credits

Clinical practice in diagnostic cytology that includes microscopic examination of gynecologic specimens with close supervision and review by the clinical instructor.

CYTO 4209 RESPIRATORY CYTOLOGY

3 Credits

Classroom and student laboratory instruction in anatomy, histology and physiology of the respiratory tract as background to the proper identification of cells removed from the corresponding tissues. Cells collected by sputum, bronchoscopy and fine needle aspiration procedures as discussed. Cellular changes associated with benign and malignant disease processes and differential diagnostic considerations are emphasized.

CYTO 4220 FINE NEEDLE ASPIRATION CYTOLOGY OF THE THYROID

2 Credits

Classroom presentation and laboratory demonstration of the anatomy, physiology, histopathology and cytology of the thyroid with emphasis on the interpretation of fine needle aspiration smears of benign and malignant thyroid lesions and method of reporting aspiration cytology of the thyroid.

CYTO 4329 URINARY CYTOLOGY

2 Credits

Classroom instruction and laboratory practice in anatomy, histology, pathology and cytology of the urinary system and thyroid gland with emphasis on interpretation of benign and malignant diseases occurring at this site.

CYTO 4249 BODY FLUID CYTOLOGY

3 Credits

Classroom instruction and laboratory practice in anatomy, histology and cytopathology of serous membranes are discussed. The problems of differentiating metastatic and primary neoplasms from reactive changes are presented topics. Also included are pediatric and AIDS cytology; the anatomy, histology, and cytopathology of the central nervous system, breast, thyroid gland, lymph nodes and sarcomas.

CYTO 4289 CYTOPREPARATORY TECHNIQUES I

1 Credit

Classroom instruction and student laboratory practice in basic techniques for proper handling, processing, and staining of cytologic specimens. Emphasis is placed upon the contribution of cytopreparatory techniques to proper specimen interpretation.

MLSC 4319 ADVANCED PRACTICE SKILLS

2 Credit

Instruction and student laboratory practice focus on the advanced study of the generic knowledge and skills required for practitioners in areas of the clinical laboratory. Selected topics include: educational methodology, laboratory management and molecular diagnostics and clinical applications.

CYTO 4350 CYTOGENETICS

1 Credit

Classroom instruction in the basic principles of human genetics including the pathogenesis of chromosomal abnormalities, as well as their role in carcinogenesis. Application of chromosomal analysis to prenatal diagnosis and genetic counseling is included.

CYTO 4369 CLINICAL PRACTICUM II

2 Credits

Clinical laboratory practice which includes microscopic examination of gynecologic specimens and fine needle aspirations encountered in cytology laboratory setting.

CYTO 4370 INDEPENDENT STUDY

3 Credits

An independent study project in cytology. Emphasis is placed on designing and conducting on any topic related to cytopathology. Search of the literature, submission of a written project report and oral presentation are required.

CYTO 4389 CYTOPREP TECHNIQUES II

1 Credit

Laboratory practice with emphasis on cytoprocessing. Techniques such as histology, special stains, electron microscopy, flow cytometry and cell imaging are introduced.

CYTO 4390 GASTROINTESTINAL CYTOLOGY

2 Credits

Classroom instruction and student laboratory practice in anatomy, physiology, histology and cytopathology of the gastrointestinal tract and accessory organs (liver, pancreas and adrenal glands). Problems of differentiating between benign and malignant conditions are emphasized.

CYTO 4469 CLINICAL PRACTICUM III

7 Credits

Clinical laboratory practice in diagnostic cytology including microscopic examination of gynecologic and non-gynecologic specimens encountered in a cytology laboratory setting.

SUMMARY OF STUDENT IMMUNIZATION AND HEALTH REQUIREMENTS

Requirement*	Patient Contact With Any Risk Of Exposure To Blood Or Potentially Infectious Body Fluids
Complete history and Physical Exam	REQUIRED
Hepatitis B- 3 doses of vaccine (at least one dose prior to any activities with any risk of exposure) or serologic proof of immunity	REQUIRED Post-vaccination serology REQUIRED
TB testing	REQUIRED
Measles – 2 doses of vaccine or serologic proof of immunity	REQUIRED
Mumps – 1 dose of vaccine or serologic proof of immunity	REQUIRED
Rubella – 1 dose of vaccine or serologic proof of immunity	REQUIRED
Influenza – annual dose of vaccine in the fall	REQUIRED
Varicella – 2 doses of vaccine or serologic proof of immunity or reliable history of clinical varicella	REQUIRED
Td – primary series of vaccine plus booster dose every 10 years	RECOMMENDED
Polio – Primary series of vaccine or booster dose(s)	RECOMMENDED

*See policy sections V.B.1. for TB testing exception; V.B.2. for exceptions for non-matriculated, less-than-half-time students; V.B.4. for medical exemptions; and V.B.5. for religious exemptions.