Bachelor of Science in Medical

Laboratory Science

Medical Laboratory Science with a Major in Cytology (BSMLS)

https://www.odu.edu/medical-diagnostic-translational-sciences/cytology (https://www.odu.edu/medical-diagnostic-translational-sciences/cytology/)

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The School of Medical Diagnostic and Translational Sciences offers a major in cytology through the Bachelor of Science in Medical Laboratory Sciences (BSMLS). The program offers a first and second degree option as well as a post-baccalaureate certificate option.

Cytologists are specially trained medical laboratory professionals who work with pathologists in detecting changes in cell samples from numerous body sites which allows the early diagnosis of cancer. This is done primarily with the use of the microscope to evaluate slide preparation of cell samples for abnormalities in structure, indicating cancer, precancerous lesions, benign tumors, infectious agents and inflammatory processes. They are also trained in specimen preparation, molecular, FISH, flow cytometry techniques, and fine needle aspiration cytology.

The program of study is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 9355 113th Street, N.W. Seminole, FL. 33775; phone: 727-210-2350; e-mail: mail@caahep.org; website: www.caahep.org (http://www.caahep.org), in association with the American Society of Cytopathology (ASC).

Theory is reinforced through an integrated clinical phase that allows the student direct experience in a hospital or lab setting providing additional training in screening techniques and diagnostic procedures. Students are required to obtain a minimum grade of 70 percent or C in all didactic coursework. Clinical coursework requires a minimum passing grade of 80, 85 and 90 percent during the first, second and third internship, respectively. Graduates are eligible to sit for the national board exam given by the ASCP (American Society of Clinical Pathology) upon successful completion of the program.

Application to the cytology program must be submitted by May 1. Competitive applicants should have an overall GPA of 2.8 or higher.

Requirements

Lower-Division General Education

Written Communication (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#written)	6
Oral Communication (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#oral)	3
Mathematics (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#math)	3
Language and Culture (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#language)	0-6
Information Literacy and Research (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#information)	3
Human Behavior (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#behavior)	3
Human Creativity (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#creativity)	3
Interpreting the Past (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#interpret)	3
Literature (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#literature)	3
Philosophy and Ethics (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#philosophy)	3
The Nature of Science (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#nature)	8
Impact of Technology (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#impact)	3

Written Communication Skills: Grade of C or better required in both courses

Oral Communication: Met in the major with CYTO 424 and CYTO 497.

Mathematics: MATH 102M or MATH 103M

Information Literacy and Research: HLTH 120G preferred

Nature of Science: BIOL 121N & BIOL 122N, BIOL 123N & BIOL 124N

Philosophy and Ethics: PHIL 345E recommended; 300/400 level P or E course meets upper division general education/Option D

Impact of Technology: HIST 304T preferred but any 300/400 level T course EXCEPT DNTH 440T meets upper-division general education/Option D

Upper-Division General Education

- Option A. Approved Disciplinary Minor, 12 hours minimum; also second degree or second major.
- Option B. Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. An approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Health Sciences and not required by the major (6 hours)

Requirements for Graduation

Requirements for graduation include the following:

- Minimum of 120 credit hours.
- Minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University.
- Minimum overall cumulative grade point average of C (2.00) in all courses taken.
- Minimum overall cumulative grade point average of C (2.00) in all courses taken toward the major.
- Minimum overall cumulative grade point average of C (2.00) in all courses taken toward a minor.
- Completion of ENGL 110C, ENGL 211C or ENGL 231C, and the writing intensive (W) course in the major with a grade of C or better. The W course must be taken at Old Dominion University.
- Completion of Senior Assessment.

Departmental Requirements

BIOL 121N	General Biology I	3
BIOL 122N	General Biology I Lab	1
BIOL 123N	General Biology II	3
BIOL 124N	General Biology II Lab	1
CHEM 105N	Introductory Chemistry	3
or CHEM 121N	Foundations of Chemistry I Lecture	
CHEM 106N	Introductory Chemistry Laboratory	1
or CHEM 122N	Foundations of Chemistry I Laboratory	
CHEM 107N	Introductory Organic and Biochemistry	3
or CHEM 123N	Foundations of Chemistry II Lecture	
CHEM 108N	Introductory Organic and Biochemistry Laboratory	1
or CHEM 124N	Foundations of Chemistry II Laboratory	
BIOL 240	Fundamentals of Anatomy and Physiology I	4
or BIOL 250	Human Anatomy and Physiology I	

BIOL 241 or BIOL 251	Fundamentals of Anatomy and Physiology II Human Anatomy and Physiology II	4
BIOL 150	Introductory Microbiology	3
BIOL 151	Introductory Microbiology Laboratory	1
Total Credit Hours		**28**

Students must complete the following courses prior to entering the cytology program: BIOL 121N/BIOL 122N, BIOL 123N/BIOL 124N, BIOL 240 or BIOL 250, BIOL 241 or BIOL 251, CHEM 105N/CHEM 106N or CHEM 121N/CHEM 122N, CHEM 107N/CHEM 108N or CHEM 123N/CHEM 124N, and BIOL 150/BIOL 151.

Cytology Major

General Education		
Complete lower-division requirements		30-36
Complete upper-division requirements		0-6
Departmental Requirements		
Complete departmental requirements		28
First Semester		
CYTO 404	General Pathology	3
CYTO 407	Clinical Histology (Strongly Recommended)	3
MDTS 401	Molecular Diagnostics Laboratory	3
MLS 403W	Management in the Clinical Setting *	3
MLS 310	Urinalysis and Body Fluids (may be taken earlier-see Degree Program Guide)	1
Second Semester		
CYTO 403	Gynecological Screening Laboratory	3
CYTO 405	Normal Gynecological Cytology	3
CYTO 415	Abnormal Gynecological Cytology	4
CYTO 430	Cytopreparation & Ancillary Techniques	4
CYTO 444	Genitourinary Cytology	2
CYTO 445	Breast Cytology	2
Third Semester		
CYTO 424	Respiratory Cytology	4
CYTO 446	Body Fluids Cytology	3
CYTO 448	Non-Epithelial Cytology	1
CYTO 468	Cytology Internship II	4
CYTO 442	Gastro-Intestinal Cytology	2
CYTO 458	Cytology Internship I	3
Fourth Semester		
CYTO 456	Fine Needle Aspiration Cytology I	3
CYTO 457	Fine Needle Aspiration Cytology II	3
CYTO 478	Cytology Internship III	8
CYTO 497	Cytology Senior Seminar	1
CYTO 499	Comprehensive Cytology Review	1
Total Credit Hours		**122-134**

* C or better required to meet the University Writing Requirement.

Certificate Option/Second Degree

A certificate in cytology or second degree in Medical Laboratory Sciences (BSMLS) is available to students who have a Bachelor's degree, with a minimum of 20 credit hours in biology and eight credit hours in chemistry. The certificate in cytology requires 61-64 credit hours and a minimum 2.8 GPA. Courses included in the certificate mirror the cytology major requirements.

Degree Program Guide

The Degree Program Guide is a suggested curriculum to complete this degree program in four years. It is just one of several plans that will work and is presented only as broad guidance to students. Each student is strongly encouraged to develop a customized plan in consultation with their academic advisor. Additional information can also be found in Degree Works.

Course	Title	Credit Hours
Freshman		
Fall		
ENGL 110C	English Composition (C or better required)	3
MATH 102M or MATH 103M	College Algebra or College Algebra with Supplemental Instruction	3
BIOL 121N	General Biology I	3
BIOL 122N	General Biology I Lab	1
CHEM 105N or CHEM 121N	Introductory Chemistry or Foundations of Chemistry I Lecture	3
CHEM 106N or CHEM 122N	Introductory Chemistry Laboratory or Foundations of Chemistry I Laboratory	1
	Credit Hours	**14**
Spring		
BIOL 123N	General Biology II	3
BIOL 124N	General Biology II Lab	1
CHEM 107N or CHEM 123N	Introductory Organic and Biochemistry or Foundations of Chemistry II Lecture	3
CHEM 108N or CHEM 124N	Introductory Organic and Biochemistry Laboratory or Foundations of Chemistry II Laboratory	1
Literature		3
Information Literacy (HLTH 120G preferred)		3
	Credit Hours	**14**
Sophomore		
Fall		
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research (C or better required) or Writing, Rhetoric, and Research: Special Topics	3
BIOL 240 or BIOL 250	Fundamentals of Anatomy and Physiology I or Human Anatomy and Physiology I	4
BIOL 150	Introductory Microbiology	3
BIOL 151	Introductory Microbiology Laboratory	1
Human Creativity		3
	Credit Hours	**14**
Spring		
BIOL 241 or BIOL 251	Fundamentals of Anatomy and Physiology II or Human Anatomy and Physiology II	4
Interpreting the Past		3
Human Behavior		3
Philosophy and Ethics (PHIL 345E preferred for Option D)		3
MLS 310	Urinalysis and Body Fluids	1
	Credit Hours	**14**

Junior		
Fall		
CYTO 404	General Pathology	3
CYTO 407	Clinical Histology	3
MDTS 401	Molecular Diagnostics Laboratory	3
MLS 403W	Management in the Clinical Setting (C or better required)	3
Impact of Technology (HIST 304T preferred for Option D)		3
	Credit Hours	**15**
Spring		
CYTO 403	Gynecological Screening Laboratory	3
CYTO 405	Normal Gynecological Cytology	3
CYTO 415	Abnormal Gynecological Cytology	4
CYTO 430	Cytopreparation & Ancillary Techniques	4
CYTO 444	Genitourinary Cytology	2
CYTO 445	Breast Cytology	2
	Credit Hours	**18**
Summer		
CYTO 424	Respiratory Cytology	4
CYTO 446	Body Fluids Cytology	3
CYTO 448	Non-Epithelial Cytology	1
CYTO 468	Cytology Internship II	4
CYTO 442	Gastro-Intestinal Cytology	2
CYTO 458	Cytology Internship I	3
	Credit Hours	**17**
Senior		
Fall		
CYTO 456	Fine Needle Aspiration Cytology I	3
CYTO 457	Fine Needle Aspiration Cytology II	3
CYTO 478	Cytology Internship III	8
CYTO 497	Cytology Senior Seminar	1
CYTO 499	Comprehensive Cytology Review	1
	Credit Hours	**16**
	Total Credit Hours	**122**