

# CYTOTECHNOLOGY & CELL SCIENCES (MS)

## Contacts

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Program Website (<https://www.jefferson.edu/academics/colleges-schools-institutes/health-professions/departments-programs/medical-laboratory-biotechnology/degrees-programs/ms-programs/cytotechnology-cell.html>)

## Program Description

Cytotechnologists are experts of cell and tissue morphology and function and the use of microscopes, automated imaging systems and sophisticated laboratory techniques to detect and diagnose diseases. Cytotechnologists work both independently and collaboratively with pathologists, radiologists, oncologists and other members of a healthcare team.

## Learning Goals/Outcomes

- Select and perform molecular and immunologic tests that help to personalize patient care
- Diagnose mysterious respiratory illnesses
- Assist clinicians in collecting and evaluating specimens
- Identify precancerous cells at their earliest and most curable stage

## Curriculum: 2 years

Course	Title	Credits
<b>First Year</b>		
<b>Fall</b>		
LS 501	Molecular Biology	3
LS 511	Functional Histology	2.5
CT 501	Principles of Cell Analysis	2
CT 511	Cytopathology I	5
CT 512	Cytopathology I Laboratory	3.5
<b>Credits</b>		<b>16</b>
<b>Spring</b>		
LS 613	Pathology	2
CT 510	Cyto&Surg Pathology Techniques	2
CT 515	Cytopathology II	5
LS 510	Intro to Molecular Diagnostics	2
CT 517	Cytopathology III	5.5
<b>Credits</b>		<b>16.5</b>
<b>Second Year</b>		
<b>Fall</b>		
LS 531	Immunology	3
CT 812	Cytotechnology Practicum I	3
CT 813	Cytotechnology Practicum II	3
LS 603	Research Design	2
LS 804	Experimental Research I <sup>2</sup>	
(optional course, requires approval)		
<b>Credits</b>		<b>11</b>
<b>Spring</b>		
CT 525	CellularMolecular&ImmunoDiagno	3
CT 575	Cytotechnology Seminar	2

Course	Title	Credits
LS 610	Reg & Fis Issues in Lab. Mgmt	3
CT 815	Cytotechnology Practicum IV	3
CT 814	Cytotechnology Practicum III	3
CT 816	Comprehensive Exam	0
LS 803	Contemporary Topics Research (or LS 805 optional course, requires approval) <sup>2</sup>	2
<b>Credits</b>		<b>16</b>
<b>Total Credits</b>		<b>59.5</b>

## Curriculum: 1 year

Course	Title	Credits
<b>First Year</b>		
<b>Fall</b>		
LS 501	Molecular Biology	3
LS 603	Research Design	2
LS 511	Functional Histology	2.5
CT 501	Principles of Cell Analysis	2
CT 511	Cytopathology I	5
LS 531	Immunology	3
CT 512	Cytopathology I Laboratory	3.5
<b>Credits</b>		<b>21</b>
<b>Spring</b>		
LS 510	Intro to Molecular Diagnostics	2
CT 510	Cyto&Surg Pathology Techniques	2
CT 515	Cytopathology II	5
CT 517	Cytopathology III	5.5
CT 525	CellularMolecular&ImmunoDiagno	3
LS 613	Pathology	2
<b>Credits</b>		<b>19.5</b>
<b>Summer</b>		
LS 610	Reg & Fis Issues in Lab. Mgmt	3
CT 575	Cytotechnology Seminar	2
CT 812	Cytotechnology Practicum I	3
CT 813	Cytotechnology Practicum II	3
CT 814	Cytotechnology Practicum III	3
CT 815	Cytotechnology Practicum IV	3
CT 816	Comprehensive Exam	0
LS 803	Contemporary Topics Research	2
<b>Credits</b>		<b>19</b>
<b>Total Credits</b>		<b>59.5</b>

## Curriculum: 2 years, advanced MS

- Advanced MS in Cytotechnology and Cell Sciences, Part-time
- Eligibility for admissions requires undergraduate degree and ASCP certification

Course	Title	Credits
<b>First Year</b>		
<b>Fall</b>		
LS 603	Research Design	2
LS 640	Methods in Bioscience Edu	3
Program approved elective		3
<b>Credits</b>		<b>8</b>
<b>Spring</b>		
Program approved electives		4-8
<b>Credits</b>		<b>4-8</b>
<b>Summer</b>		
LS 610	Reg & Fis Issues in Lab. Mgmt	3

Course	Title	Credits
Program approved elective		3
<b>Credits</b>		<b>6</b>
<b>Second Year</b>		
<b>Fall</b>		
LS 531	Immunology	3
Program approved elective		3
LS 804	Experimental Research I <sup>2</sup>	
Optional course, requires approval		
<b>Credits</b>		<b>6</b>
<b>Spring</b>		
LS 613	Pathology	2
Program approved elective		3-4
LS 803	Contemporary Topics Research (or LS 805 (optional course requires approval) )	2
<b>Credits</b>		<b>7-8</b>
<b>Total Credits</b>		<b>31-36</b>

<sup>1</sup> Program approval and minimum course grade requirements must be met to register for LS 644.

<sup>2</sup> To meet entry-level competency requirements for immunology credits, students entering as certified cytotechnology graduates who have not completed three credits in immunology are required to enroll in LS 531 Immunology. Certified cytotechnology graduates who have completed three credits of immunology may enroll in a program-approved elective.

<sup>3</sup> To meet the research requirement, students may take a classroom literature review-based course (LS 803) or, under special circumstances, engage in a two-semester wet bench research project with a selected PI (LS 804 and LS 805). Students must meet with their faculty advisor and/or program director to determine which option best meets their educational goals. LS 804 and LS 805 are not a substitute for nor may run concurrently with practica courses.

<sup>2</sup> To meet the research requirement, students may take a classroom literature review-based course (LS 803) or, under special circumstances, engage in a two-semester wet bench research project with a selected PI (LS 804 and LS 805). Students must meet with their faculty advisor and/or program director to determine which option best meets their educational goals. LS 804 and LS 805 are not a substitute for nor may run concurrently with practica courses.

## Curriculum: 1 year, advanced MS

- Advanced MS in Cytotechnology and Cell Sciences

Course	Title	Credits
<b>First Year</b>		
<b>Fall</b>		
Program approved electives		8-9
LS 531	Immunology <sup>1</sup>	3
LS 603	Research Design	2
LS 640	Methods in Bioscience Edu	3
LS 804	Experimental Research I (optional, approval required) <sup>2</sup>	
<b>Credits</b>		<b>16-17</b>
<b>Spring</b>		
LS 610	Reg & Fis Issues in Lab. Mgmt	3
LS 613	Pathology	2
LS 803	Contemporary Topics Research (or LS 805 optional course, requires approval) <sup>2</sup>	2
Program approved electives		8
<b>Credits</b>		<b>15</b>
<b>Total Credits</b>		<b>31-32</b>

<sup>1</sup> To meet entry-level competency requirements for immunology credits, students entering as certified cytotechnology graduates who have not completed three credits in immunology are required to enroll in LS 531 Immunology. Certified cytotechnology graduates who have completed three credits of immunology may enroll in a program-approved elective.