

# INTEGRATIVE CELL BIOLOGY (MS)

Knowledge in the Biomedical Sciences has been growing exponentially over the last decade. As we learn more about cells at the molecular level, we also discover the need to understand their interactions and functions integratively, emulating life in an in vitro setting. The Master of Science in Integrative Cell Biology at Loyola University Chicago is training the next generation of biomedical researchers. Through the program, students acquire a solid foundation and understanding of cell function at molecular, multicellular tissue, and organ structure levels.

## Related Programs

### Doctoral

- Integrative Cell Biology (PhD) (<https://catalog.luc.edu/graduate-professional/graduate-school/health-sciences/biomedical-sciences/integrative-cell-biology-phd/>)

### Combined

- Integrative Cell Biology (MD/PhD) (<https://catalog.luc.edu/graduate-professional/dual-degree-programs/integrative-cell-biology-md-phd/>)

## Curriculum

The Master of Science in Integrative Cell Biology requires 30 credit hours of coursework and a thesis.

### Coursework Requirements

Code	Title	Hours
BMSC 402	Statistical Methods for Biomedical Science	3
BMSC 405	Ethics in Biomedical Sciences	1
BMSC 410	Biochemistry and Molecular Biology	4
BMSC 412	Cell Biology	4
BMSC 416	Methods Biomedical Science	1
BMSC 418	Presentation skills	1
ICB 403	Graduate Histology	3
Select one of the following:		3
BMB 590	Molecular Biology of Oncogenesis	
MIIM 402	Microbes & Hosts	
MIIM 413	Basic Concepts of Immunology	
PHAR 410	Signal Transduction	
ICB 445	Scientific Literature: Review & Critique	1
ICB 446	Review Seminar	1
ICB 595	Thesis Supervision	0
ICB 459	Research	8
<b>Total Hours</b>		<b>30</b>

### Research and Thesis

During the summer between the first and second year, students will meet with a potential mentor and select a laboratory where they will conduct research leading to the thesis. The final approved thesis must be submitted to a publicly available database in accordance with Graduate School policy

## Graduate & Professional Standards and Regulations

Students in graduate and professional programs can find their Academic Policies in Graduate and Professional Academic Standards and Regulations (<https://catalog.luc.edu/academic-standards-regulations/graduate-professional/>) under their school. Any additional University Policies supersede school policies.

## Learning Outcomes

Upon completion of this program, students will be able to:

- Demonstrate a general knowledge base in the biomedical sciences with an understanding of fundamental biochemical, molecular, and cellular processes and current biomedical research methods.
- Propose original biomedical research questions and design experiments to interrogate these questions.
- Execute critical experiments to address the relevant biomedical research questions.
- Clearly and effectively communicate scientific information in both oral and written forms
- Critically evaluate the results to arrive at a conclusive interpretation of the novel findings.
- Search and critically evaluate the scientific literature and data in the context of the novel findings.