

REGENERATIVE AND STEM CELL TECHNOLOGIES, MASTER OF SCIENCE

MS in Regenerative and Stem Cell Technologies (<https://advanced.jhu.edu/academics/graduate/ms-regenerative-stem-cell-technologies/>)

Regenerative and stem cell technologies have the potential to revolutionize treatments for numerous diseases and health conditions. Students in the Master of Science in Regenerative and Stem Cell Technologies program develop the expertise needed to advance in this rapidly growing field. The program also provides students a chance to collaborate with JHU's research faculty during a brief lab residency that offers hands-on experience.

The program can be tailored for numerous career goals with electives that span an array of specializations. Specializations include:

- Bioinformatics
- Epigenetics
- Human molecular genetics
- Immunology
- Personalized medicine
- Pharmacology
- Recombinant DNA

This 10-course degree program offers an option to complete a thesis, is offered part time or full time, and can be completed 95% online. With a one-week lab residency, students find the flexibility needed to meet work and life commitments while preparing to advance in this emerging field.

Admissions Criteria for all Advanced Academic Programs (<https://e-catalogue.jhu.edu/arts-sciences/advanced-academic-programs/Admission/#admissionrequirementstext>)

PROGRAM-SPECIFIC REQUIREMENTS

In addition to the materials and credentials required for all programs, the Master of Science in Regenerative and Stem Cell Technologies program requires an undergraduate degree in the sciences or engineering with at least a 3.0 on a 4.0 scale. Meeting the minimum GPA requirement does not guarantee admission.

Resume

Statement of Purpose: Please provide a statement, up to one page in length, describing your personal background and/or a part of your life experience that has shaped you or your goals. Feel free to elaborate on personal challenges and opportunities that have influenced your decision to pursue a graduate degree at Johns Hopkins.

Required Coursework:

- One semester of organic chemistry
- One semester of biochemistry
- One semester of molecular biology
- One semester of cell biology

Program Requirements

Students in the MS in Regenerative and Stem Cell Technologies program must complete:

- Six core courses
- Four electives

Code	Title	Credits
<i>Core Courses - Required:</i>		24
AS.410.609	Developmental Biology	
AS.410.630	Gene Therapy	
AS.410.653	Regenerative Medicine: from Bench to Bedside	
AS.410.664	Ethics in Emerging Bioscience Technologies	
AS.410.753	Stem Cell Biology	
AS.410.780	Stem Cell Culture Laboratory Methods	
<i>Electives</i>		
Select four electives ¹		16
Total Credits		40

¹ Students may select four electives from the course listings page (https://e-catalogue.jhu.edu/course-descriptions/_biotechnology/).

Learning Objectives

Graduates of the MS in Regenerative and Stem Cell Technologies program will be equipped to:

- Demonstrate laboratory-based methods to manipulate stem cells
- Assess diverse methods of regenerative and stem cell technologies and their applications
- Analyze the continuum from research-based methods to clinical applications
- Apply current FDA guidances on cell therapy, gene therapy, and tissue engineering to real-world scenarios
- Analyze the early development of complex organisms
- Appraise the ethical reasoning behind the usage of cell therapy, gene therapy, and tissue engineering in patients