Cell and Gene Therapies, MS

Northeastern University's Master of Science in Cell and Gene Therapies is a professional master's program, an innovative, nonthesis graduate degree. It combines advanced interdisciplinary training in advanced therapies, such as cell therapies and gene therapies, with the development of high-value business skills critical to success in today's dynamic workplace. This program is designed to prepare graduates to innovate, collaborate, and lead as research, managerial, or technical professionals in a wide range of the cell and gene therapies fields.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Code	Title	Hours
Required Core		
BINF 6200	Bioinformatics Programming	4
BIOL 5543	Stem Cells and Regeneration	4
BIOL 5583	Immunology	4
BIOL 6381	Ethics in Biological Research	2
BIOT 5631	Cell Culture Processes for Biopharmaceutical Production	3
BIOT 5800	Gene Therapies	2
BIOT 5820	Cellular Therapies	2
BIOT 5830	Regulatory Landscape of Cell and Gene Therapies	2
BIOT 5840	Cell and Gene Therapy Lab	3
PMST 6254	Advanced Drug Delivery Systems	3
Co-op		
BIOT 6500	Professional Development for Co-op	0
BIOT 6964	Co-op Work Experience	0
Elective		
Complete a minimum of 3 semester hours from the following to meet the 32 total hours for the program:		3
BINF 6308	Bioinformatics Computational Methods 1	
BIOE 5430	Principles and Applications of Tissue Engineering	
BIOE 6000	Principles of Bioengineering	
BIOL 5543	Stem Cells and Regeneration	
BIOL 5549	Inventions in Microbial Biotechnology	
BIOL 5573	Medical Microbiology	
BIOL 5581	Biological Imaging	
BIOL 5583	Immunology	
BIOL 5587	Comparative Neurobiology	
BIOL 5591	Advanced Genomics	
BIOL 6381	Ethics in Biological Research	
BIOT 5220	The Role of Patents in the Biotechnology Industry, Past and Future	
BIOT 5225	Managing and Leading a Biotechnology Company	
BIOT 5330	Drug Safety and Immunogenicity	
BIOT 5340	Introduction to Biotherapeutic Approvals	
BIOT 5400	Scientific Information Management for Biotechnology Managers	
BIOT 5500	Concepts in Regulatory Science	
BIOT 5560	Bioprocess Fundamentals	
BIOT 5635	Downstream Processes for Biopharmaceutical Production	
BIOT 5640	Drug Product Processes for Biopharmaceuticals	
BIOT 5700	Molecular Interactions of Proteins in Biopharmaceutical Formulations	
BIOT 5810	Cutting-Edge Applications in Molecular Biotechnology	
BIOT 5850	Higher-Order Structure Analytics	
BIOT 6300	Pharmaceutical Microbiology	
BIOT 6310	CGMP Statutes and Regulation	
BIOT 6320	Quality Management Systems and Validation	

BIOT 6340	Sterile Manufacturing Operations
CHME 5101	Fundamentals of Chemical Engineering Analysis
CHME 5160	Drug Delivery: Engineering Analysis
CHME 5185	Design of Experiments and Ethical Research (DOEER)
CHME 5630	Biochemical Engineering
CHME 5631	Biomaterials Principles and Applications
CHME 5632	Advanced Topics in Biomaterials

Program Credit/GPA Requirements

32 semester hours required
Minimum 3.000 GPA required