

# MS BIOMEDICAL ENGINEERING, SPECIALIZATION IN REGENERATIVE MEDICINE

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## Program Learning Objectives

1. Perform fundamental laboratory skills involved in regenerative medicine research & development.
2. Discuss and critically evaluate biomedical primary literature.
3. Effectively communicate technical topics to both peer and lay audiences.
4. Explain the process of biotechnology development & commercialization.
5. Describe how research & development efforts are motivated by and impact physician & patient experiences.
6. Design and execute independent research projects.

### Required Courses

BMED 520 or BMED 530	Modeling of Biomedical Systems Biomaterials	4
BMED 505 or BMED 515	Biomedical Signal Transduction and Data Acquisition Introduction to Biomedical Imaging	4
STAT 513 or IME 527	Applied Experimental Design and Regression Models Design of Experiments	4
BMED 510	Principles of Tissue Engineering	4
BMED 560	Cell Transplantation and Biotherapeutics	2
BMED 561	Cell Transplantation and Biotherapeutics Laboratory	2
BIO/CHEM 475 or ASCI 403	Molecular Biology Laboratory Applied Biotechnology in Animal Science	3-5
BIO 534	Principles of Stem Cell Biology	2
ASCI 581	Graduate Seminar in Animal Science	1
BIO 590	Seminar in Biology	1
BMED 563	Biomedical Engineering Graduate Seminar	2
BIO 509	Communicating Biology to General Audiences	1
BIO/ASCI/BMED 583	Research Experience for Regenerative Medicine Students	2
ASCI/BIO/BMED 593	Regenerative Medicine Internship	9
Approved Electives <sup>1</sup>		4
<b>Total units</b>		<b>45</b>

<sup>1</sup> The range of elective units reflects differences in the Molecular Techniques Course options (BIO 475; ASCI 403) and inclusion of BMED 500, such that the total required units for the program are 45.