

**LEHMAN COLLEGE  
OF THE  
CITY UNIVERSITY OF NEW YORK**

**DEPARTMENT OF BIOLOGICAL SCIENCES**

**CURRICULUM CHANGE**

1. **Type of change:** Experimental Course

2.

Department(s)	Biological Sciences
Career	<input checked="" type="checkbox"/> Undergraduate <input checked="" type="checkbox"/> Graduate
Academic Level	<input checked="" type="checkbox"/> Regular <input type="checkbox"/> Compensatory <input type="checkbox"/> Developmental <input type="checkbox"/> Remedial
Subject Area	Biotechnology
Course Prefix & Number	BIO 421
Course Title	Current Topics in Medical Biotechnology
Description	In a seminar class format, students will explore a variety of biotechnological tools and challenges within medicine including immune response reactions, drug/vaccine discovery and development, gene therapy, and stem cell technology. Additional topics covered include toxicology, immune defense-related biopharmaceuticals, and nucleotides and peptides as biopharmaceuticals. The field of Biotechnology provides excellent employment opportunities in both academia and industry. Medical biotechnology and biomedicine are expected to be among the fastest growing sectors for employment in the medical research field.
Pre/ Co Requisites	Prerequisites: BIO 166,167, at least one BIO 200-300 level course, and BIO 420
Credits	3
Hours	3
Liberal Arts	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Course Attribute (e.g. Writing Intensive, WAC, etc)	Writing Intensive
General Education Component	<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Required <input type="checkbox"/> English Composition <input type="checkbox"/> Mathematics <input type="checkbox"/> Science

	<input type="checkbox"/> Flexible
	<input type="checkbox"/> World Cultures
	<input type="checkbox"/> US Experience in its Diversity
	<input type="checkbox"/> Creative Expression
	<input type="checkbox"/> Individual and Society
	<input type="checkbox"/> Scientific World

**3. Rationale:** Medical biotechnology involves the use of laboratory techniques to study and manipulate nucleic acids and proteins, and these tools can be applied to develop and improve drugs, vaccines, diagnostic tests, and therapies aimed at improving human and animal health. The field of Biotechnology provides excellent employment opportunities in both academia and industry. Medical biotechnology and biomedicine are expected to be among the fastest growing sectors for employment in the medical research field.

**4. Learning Outcomes (By the end of the course students will be expected to):**

- Have gained a theoretical knowledge of medical biotechnology, as well as an understanding of the practical clinical applications of this field in improving human health
- Analyze a research problem, formulate a hypothesis, and describe protocols for experiments designed to test the hypothesis
- Have an understanding of the concepts of recombinant DNA technology or genetic engineering
- Describe current or future experimental approaches aimed at facilitating the production of biopharmaceuticals in microbial and mammalian cell systems
- Use appropriate medical biotechnological terms during written and oral communication
- Organize ideas for written and oral communication
- Extract and assimilate key concepts in medical biotechnology from a literary source

**5. Date of Departmental Approval: 3/30/2016**