MBI

Master of Science in Biotechnology

(Edition 2009)

First Semester

Code	Name	CL	L	U	CA	UDC
BT4005	Cell Biology and Physiology	3	0	12	3	3.5
BT5006	Genetic Engineering	3	0	12	3	3.5
GI5000	Research and Innovation Methods	1.5	0	6	1.5	0
OP4000	Quality Development Course	1.5	0	6	1.5	0
		9	0	36	9	7

Second Semester

Code	Name	CL	L	U	CA	UDC
BT4004	Instrumental Analysis in Biotechnology	3	0	12	3	3.5
BT5005	Selected Topics in Biotechnology	3	0	12	3	3.5
IN5058	Design and Analysis of Experiments	3	0	12	3	3.5
		9	0	36	9	10.5

Third Semester

Code	Name	CL	L	U	CA	UDC
GI5007	Thesis I	3	0	12	3	
OP5042	Elective I	3	0	12	3	0
OP5043	Elective II	3	0	12	3	0
		9	0	36	9	0

Fourth Semester

Code	Name	CL	L	U	CA	UDC
GI5008	Thesis II	3	0	12	3	
OP5044	Elective III	3	0	12	3	0
OP5045	Elective IV	3	0	12	3	0
		9	0	36	9	0

Academic credits

CL The letter "CL" indicates the number of class-hours per week.

L The letter "L" indicates the number of laboratory-hours per week.

U The letter "U" represents the equivalent time in courses lasting 15 weeks (semester) and 12 weeks (trimester), of weekly work that the student dedicates to the course to meet its objectives. They include the "class hours", as well as the time dedicated to the student's independent work.

CA The letters "CA" represents the number of semester credit hour of the course.

UDC Load Units

Program and Learning Outcomes

General Program Objectives

The program's objective is to educate professionals who will practice in the agricultural, health and industrial sectors, incorporating biotechnological techniques into the production and manufacture of satisfiers; who are committed to their communities, on social, ethical and economic levels; aware of the need to create new sustainable technologies; and with an outstanding entrepreneurial and innovative spirit.

Learning Outcomes

On completing the program, students will be able to:

- Work in the areas of new biotechnological product and process research and development.
- Serve in academic or business settings, participating actively in the development of biotechnological processes at laboratory level and their implementation at industrial level, thus acquiring a competitive advantage in the professional environment.

Target Audience

This master's degree is designed for graduates from areas related to biology, agronomy, chemistry, biochemistry, food industries, medicine and biochemical engineering, among others.

Program Outcomes

Justification:

The huge demand to make processes more efficient in the agricultural, healthcare and industrial sectors, among others, has fomented the incorporation of biotechnological techniques into the production and transformation of satisfiers. Therefore, professionals who are able to perform in academic or business settings can participate actively in the development of biotechnological processes in the laboratory and also implement them in industrial settings, thus acquiring a competitive advantage in their careers.

General program objectives

The aim of the MBI program is to prepare professionals who are committed to their communities, on a social, ethical and economic level, aware of the need to create new sustainable technologies, and with a remarkable spirit of entrepreneurship and innovation.

Learning outcomes:

On completing the program, graduates will be able to work in the areas of new product and biotechnological process research and development.

Target audience:

This program is offered to professionals who hold a degree in biology, agronomy, chemistry, biochemistry, food industry, medicine and biochemical engineering, among others.

Research areas

- Biocatalysis, natural antioxidants and nutraceuticals
- Biotechnology of cereals, fruits and vegetables
- Biopackaging and sanitary immunity
- Bioprocesses: fermentations and bioseparations (pigments, aromas and biofuels)
- Microbiology and the environment: bioremediation.

Campus that offer this program

Campus	Number of periods offered	From	Closed for new students
Monterrey	Complete	Semester Aug - Dec 2009	

Last update: 24/January/2023

Graduate Requirements

To obtain a specialty degree, a master's degree or Ph. D. degree at Tecnológico de Monterrey, students are required to:

1. Have completely finished the undergraduate cycle prior to passing the first course in the curriculum of the specialty, master program, medical residency, or doctoral program.

2. Have fulfilled, in compliance with existing standards, the academic prerequisites of the corresponding program, through proficiency tests or the corresponding remedial courses.

3. Have obtained a bachelor degree--with the antecedent of high school or its equivalent—that is equivalent to those offered by Tecnológico de Monterrey.

4. Have covered all the courses in the given curriculum, either by passing the courses at Tecnológico de Monterrey or by obtaining revalidation or equivalence agreements—in compliance with the standards-- corresponding to part of the courses taken at other institutions, and passed the remaining courses at Tecnológico de Monterrey. Courses taken at foreign universities with which there are agreements are considered, for the effects of this article, as courses taken at Tecnológico de Monterrey, as long as they do not exceed a set percentage of the curriculum established by each graduate program.

5. In those curricula that so specify, to have prepared a research project or thesis that, having been defended before an academic committee, has been approved by said committee.

6. Have taken at least the equivalent of the second half of the corresponding curriculum at Tecnológico de Monterrey , in the case of students with revalidation or equivalence agreements at this level. Flexibility may be exercised in this standard in graduate programs that, under agreement, may be established jointly with other universities.

7. For doctoral programs, have published (or have proof of acceptance for publication), in an indexed journal, at least one paper on a topic related to the student's research project.

Last update: 21/July/2017