

Curriculum of Master Program in Biotechnology Industry, Chang Gung University (For students admitted in Fall, 2026)						
Required / Elective	Course Title	Credit	Year	Fall	Spring	Note
Required Courses	Seminar	2	1	1	1	Required courses for a total of 4 Credits.
	Seminar	2	2	1	1	
	Practical Industrial R&D	1	1		1	Required courses for a total of 2 Credits. *Note 3
	Practical Industrial R&D	1	2		1	
	Biotechnology Practicum	4	2	4		Summer Course
	Master's Thesis	6				
Elective Courses in Principle Applications in Biotechnology	Intellectual Properties in Biomedical Industry	2	1	2		
	Biotechnology Regulations and cGMP Guidelines	1	1	1		
	Advances in Laboratory Medicine	2	1	2		
	Intelligent Control Systems	3	1	3		English as Medium of Instruction
	Neural Networks and Deep Learning	3	1	3		English as Medium of Instruction
	Immunological Techniques	1	1	1		
	Stem Cell Biology	2	1		2	
	Flow cytometry	1	1		1	Offered Bi-annually
Elective Courses in Practical Applications in Biotechnology	Advanced Biotechnology	2	1	2		
	Applications of Nanobiotechnonlgy in Medicine	2	1	2		
	Immunological Techniques Laboratory	1	1	1		
	Recent advances in Biotechnology Applied in human Diseases	1	1	1		English as Medium of Instruction
	The Frontiers in Molecular Diagnostics Technology	1	1	1		
	Advanced Biotechnology Laboratory-Molecular Cell Biology	2	1	2		Offered Bi-annually
	The Frontier of Biotechnology in Molecular Diagnosis Laboratory	2	1	2		Offered Bi-annually
	Laboratory of Molecular Diagnosis of Human Genetic Disorders	1	1	1		Summer Course Offered Bi-annually
	Embryonic Stem Cell Culture Techniques Laboratory	1	1	1		Summer Course Offered Bi-annually
	Laboratory Technologies for Infectious Disease Detection	1	1	1		Offered Bi-annually
	Innovation, creativity and entrepreneurship courses	2	1	2		
	Laboratory Technologies for Infectious Disease Detection	2	1	2		
	Innovation and entrepreneurship: case studies and practice	2	1	2		

Protein biomarker detection and quantification by advanced technologies	1	1	1		
Practical course of protein biomarker detection and quantification by advanced technologies	1	1	1		
Lab of Flow Cytometric Technology	1	1		1	Offered Bi-annually
Biotechnology industrial analysis and corporate valuation	2	1		2	Offered Bi-annually
Application of Stem Cell Technology and Tissue Engineering in Regenerative Medicine	2	1		2	
Business strategy for the biotech and health industries	2	2	2		
Financial Management of Biotech and Health Industry	2	2		2	Offered Bi-annually

Note :

1. Core total : 34 Credits.

- (1) Required courses: 10 Credits, including 2 credits from "Industrial R&D Practice" (fall and spring semesters) offered by the PhD Program in Biotechnology Industry.
- (2) Elective courses: 18 Credits
- (3) Master Thesis: 6 Credits (given after passing the final defense)

2. Students have to take one of the following English proficiency test and meet its respective requirement before graduation :

- (1) Pass the High-Intermediate Test of GEPT.
- (2) TOEFL score of 500 and above.
- (3) iBT TOEFL score of 61 and above.
- (4) FLPT-English with an average score of 65 and above.
- (5) IELTS 5 and above.
- (6) TOEIC score of 600 and above.
- (7) Linguaskill score of 145 and above.
- (8) BEST Test of English Proficiency score is 230 points (with no individual section score lower than 100 points), and the Speaking and Writing Test score is 610 points (with no individual section score lower than 280 points).
- (9) Other equivalent international English proficiency tests (relevant examination documents must be provided).
- (10) Englishscore B2 level (TEOIC : 785 , EnglishScore : 400) .
- (11) Participate in the internal English proficiency test organized by the school and meet the internal test standards.
- (12) Complete one semester of the remedial English course "English Workshop" and achieve a passing grade.
- (13) Students should submit the score report to program office for the review of English requirement for graduation before applying the second stage of degree examination.

3. Students in this program may take the following doctoral-level courses offered by this university, which may be counted toward the required or elective credits of this program.:

- (1) PhD Program in Biotechnology Industry:
Industrial R&D (Required), Biopharmaceutical Development (Elective), BioBusiness Awakening Forum (Elective), BioBusiness Creative Market (Elective), Project plan and patent writing (Elective), Biopharmaceutical Testing (Elective), Knowledge and steps to become an entrepreneur in the bio-industrial (Elective), One Health: human, animal, and environmental health (Elective), Advanced Biostatistics (Elective).
- (2) Graduate Institute of Biomedical Sciences:
Scientific Methods (Elective).

4. With the consent of the advisor, students may also take courses offered by other graduate institutes in CGU to meet the credit requirement for graduation; only the total credits earned from other institutes cannot exceed 50% of the

total elective credits for graduation.

5. Course selection and registration should be approved and signed by the thesis mentor.