

Curriculum of the Bachelor Program at the Department of Biomedical Sciences, Chang Gung University (For students admitted in Fall, 2026)

Required / Elective		Subject	Year 1		Subject	Year 2		Subject	Year 3		Subject	Year 4	
			F	S		F	S		F	S		F	S
Required Courses		General Biology (1)(2)	2	2	Biostatistics	2		Seminar (1)(2)	2	2			
		General Biology Laboratory (1)(2)	1	1	Biochemistry	4		Independent Study (1)(2)	2	2			
		General Physics		2	Biochemistry Laboratory	2		Genetics	3				
		General Chemistry	2		Molecular Biology		2	Immunobiology	2				
		General Chemistry Laboratory	1		Molecular Biology Laboratory		2	Microbiology		2			
		Organic Chemistry		4	Cell Biology		2	Introduction to Omics		2			
		Experimental Organic Chemistry		1	Physiology		3						
		Basic programming language for biologists		2	Physical Education	0	0						
		Physical Education (1)	0	0	Analytical Chemistry	2							
		Biomathematics (1)	2										
	Advanced Program in Clinical Trials				Biomedical Data Analysis and Statistical Software		3	Fundamentals of Human Disease	2		Pharmacokinetics and Pharmacodynamics of Clinical Tial	3	
								Basic Pharmacology		2	Clinical Trial Literature Discussion (2)	2	
								Clinical Trial Literature Discussion (1)		2	Clinical Trial Data Science	2	
											Clinical Trial Professional English	2	
											Epidemiology Theory	2	
											Clinical Trial Principles and Methods		2
											Clinical Trial Talent Development		2
	Advanced Program in Biotechnol ogy Industry				Molecular Cloning		2	Introduction to Biotechnology Industry	2		Seminar for advanced program in biotechnology industry (1)(2)	2	2
					Advanced Biochemistry		2	Basic Pharmacology		2	Advanced Microbiology	2	
					Introduction to Biotechnology Management		3	Biotechnology English		2	Biotech Industrial Practicum (Summer)	2	
					Research Practice (1)(2)	2	2	Strategic Planning for Biomedical Innovation and Start-ups		2	Optical Biosensing	2	
					Biomedical Data Analysis and Statistical Software		3	Stem Cell Biology	2		Separation Science	2	
					Life Science Technique (1) (Summer)	2		Life Science Technique (2) (Summer)	2		Life Science Technique (3) (Summer)	2	
								Tissue Engineering and its Application in Regenerative Medicine		2			
Elective Courses	Advanced Program in Biomedica l Research				Advanced Biochemistry		2	Scientific Writing	2		Seminar (3)(4)	2	2
					Research Practice (1)(2)	2	2	Cardiovascular Physiology	2		Undergraduate Thesis Research (1)(2)	2	2
					Introduction to Neuroscience(odd year)	2		Cellular and Synaptic Neurophysiology (even year)	2		Cancer Biology and Cancer Therapy	2	
					Molecular Cloning		2	Introduction to English Scientific Writing and Presentation	2		Epigenetics : Chromatin and Gene Regulation	2	
					Embryology		2	Metabolomics	2		Advanced Microbiology	2	

[illegible]

5. Course Prerequisites:

- (a) Introduction to Clinical Trial Design and Methods: Requires prior completion of the 2-credit Introduction to Biostatistics.
- (b) Clinical Trial Pharmacokinetics and Pharmacodynamics: Requires prior completion of the 2-credit Introduction to Pharmacology.
- (c) Advanced Biochemistry: Requires prior completion of the 4-credit Biochemistry.
- (d) Molecular genetics and genomic engineering: Requires prior completion of the 2-credit Molecular Biology.

6. Dual Majors: Students from other departments pursuing a dual major in this department are exempt from completing one of this department's specialized graduation programs. Students from this department pursuing a dual major in another department are also exempt if they meet the dual major requirements of the other department.

7. The following master's program courses taken by students of this department may be counted as departmental elective courses.

- (1) Graduate Institute of Biomedical Sciences: Protein biomarker detection and quantification by advanced technologies, Practical course of protein biomarker detection and quantification by advanced technologies, Drosophila Model and Human Diseases, Biological Database Management and Applications, An animal model: honey bees, Special Topics in Aging Research, Human Molecular Genetics.
- (2) Master Program in Biotechnology Industry: Intellectual Properties in Biomedical Industry, Biopharmaceutical testing, Biopharmaceutical testing Operations, Innovation, creativity and entrepreneurship courses.
- (3) Department of Artificial Intelligence Master's Program: Bioinformatic analysis, Clinical informatics.

Department Chair :

Committee Chair:

Administrative: