

The Course Map for the Department of Molecular Biology and Human Genetics (Bachelor Program)

Educational Aim	Required / Elective	Freshman		Sophomore		Junior		Senior		Core Competency	Prospect	
		1 st semester	2 nd semester	1 st semester	2 nd semester	1 st semester	2 nd semester	1 st semester	2 nd semester			
To train the students to have the knowledge and experimental skills in molecular biology and human genetics	Required course (Course title/Credits)	General Biology 3	Biostatistics 2	Biochemistry (I) 3	Biochemistry (II) 3	Studies on scientific literature 1	Introduction to Human Genetics (II) 2			Capable of knowledge in molecular biology and human genetics	<ul style="list-style-type: none"> • Continue to advanced graduated study either here or abroad. Job market prospects : <ul style="list-style-type: none"> • Biotech R&D • Biotech management • Biotech QC • Clinical research staff • Academic research staff • Working in health related profession • High school biology teacher • Civil servant 	
		General Chemistry 3	Organic Chemistry 3	Molecular Biology 3	Cell Biology 3	Introduction to Human Genetics (I) 2	Introduction to Cancer Biology 2					
		The stories behind the technological advances in molecular medicine and human genetics 1	Genetics 3			Introduction to Signal Transduction 2	Stem Cell 2					
						Developmental Biology 3	Genomics and Proteomics 3					
		Biology Lab 1	Chemistry Lab 1	Principle and Technology of Molecular Biology and Human Genetics 3	Biochemistry Lab 1	Study on Special Topic (III) 2				Able to carrying out experiment in molecular biology and human genetics		
		History of Molecular Biology 2			Biotechnology 3		Seminar (I) 2	Seminar (II) 2		Posses analyze in expression, critical assessment and communication		
		Program in biotechnology and precision medicine (elective) (Course title/Credits)		Genetics Laboratory Technique 2			Practical detection and analysis of biomarkers 2	Introduction of using mouse as experimental model 2 (Odd school year)		Principles and practices for Nanomedicine 1		Able to carrying out experiment in molecular biology and human genetics
							Cell Culture Technology 2	Next-Generation Sequencing: Principle, Analysis and Industrial Application 2				
					Practical bioinformatics 3			Genetic Counseling 2				Capable of knowledge in molecular biology and human genetics
								Molecular Genetics 2				
								Introduction to cell cycle 2 (Odd school year)				
								Industry Internship 1		Posses analyze in expression, critical assessment and communication		
		Elective course (Course title/Credits)	Calculus 2	Specific topics on popular science 2	Concepts and Ethics in Research 2	Physiology 2	Immunology 2			Evolution 2		Capable of knowledge in molecular biology and human genetics
			Guided reading on popular science 2		Foundation in Microbiology 2	Overview of Geriatric Medicine 2						
			Career Development of Molecular Biology and Human Genetics 1		Molecular Anthropology 2	Lab Navigation 2 (Even school year)						
					Study of Special Topics (I) 2	Study of Special Topics (II) 2		Study on Special Topic (IV) 2	Study on Special Topic (V) 2	Study on Special Topic (VI) 2		Able to carrying out experiment in molecular biology and human genetics