

Chang Gung University Courses for Master Program in CME Department （112Academic Year Calendar）																	
Fall semester: August 2023~January 2024																	
	Course Code	E / C	SUBJECT	Crt.	Grade	1Sem.	2Sem.		Course Code	E / C	SUBJECT	Crt.	Grade	1Sem.	2Sem.		
	CEM009	C	Research on Special Topics (1)(2)	2	1	1	1	Chemical Field/Professional	CEM101	E	Air Pollution Control Theory and Design	3	1	3			
	CEM010																
	CEM011	E	Seminar(1)(2)	4	1	2	2		CEM710	E	Instrumentation and Control System Design	3	1	3			
	CEM012																
	CEM013	E	Seminar(3)(4)	4	2	2	2		CEM350	E	Particulate Engineering	3	1	3			
	CEM014																
Chemical Field/Core	CEM030	E	Advanced Reaction Engineering	3	1	3			CEM161	E	Enzymes and Cell Immobilization	3	1	3			
	CEM052	E	Advanced Transport Phenomena	3	1	3			CEM360	E	Applied Industrial Microbiology	3	1	3			
								CEM102	E	Special Lecture in Practice of Chemical Industry	3	1	3	3			
	CEM220	E	Advanced Process Engineering	3	1		3	CEM016	E	Theory and Design of Wastewater Treatment	3	1		3			
	CEM270	E	Advanced Thermodynamics	3	1		3	CEM540	E	Bioreactor	3	1		3			
								CEM053	E	Advanced Process Control	3	1		3			
Materials Field/Core	CEM120	E	Advanced Organic Materials	3	1		3	CEM21Y	E	Design of Experiments	3	1		3			
	CEM123	E	Advanced Inorganic Materials	3	1	3		CEM256	E	Battery and Energy Conversion	3	1		3			
								CEM381	E	Chemical Process Simulation Practices	3	1		3			
								CEM039	E	Industrial Instrumentation and Control	3	1		3			
								CEM260	E	Supercritical Fluids and its Applications	3	1		3			
								CED005	E	Applied Industrial Microbiology	3	1		3			
College of Engineering		E	English Speaking and Presentation (I)	2	—	2		Materials Field/Professional									
		E	English Speaking and Presentation (II)	2	—		2		CEM172	E	Ceramic Materials	3	1	3			
		E	English Technical Writing (1)	1	—	1			CEM131	E	Polymer Structure and Physical Properties	3	1	3			
		E	English Technical Writing (2)	1	—		1		CEM153	E	Membrane Technology	3	1	3			
Remarks									CEM080	E	Opto-Polymers & Their Application	3	1	3			
									BEM104	E	Biomaterial	3	1	3			
									CEM132	E	Physical Metallurgy Principles	3	1	3			
									CEM091	E	Solid State Chemistry	3	1		3		
									CEM452	E	Polymer Blends	3	1		3		
									CEM454	E	Thin Film Processing	3	1		3		
								CEM520	E	Functional Polymers	3	1		3			
								CEM025	E	The Photoelectrochemical Technology	3	1		3			
								CEM024	E	Nanobiotechnology	3	1		3			
								BEM129	E	Surface Analysis Technology	3	1	3				
								CED008	E	Clinical Applications of Biomedical Engineering and Materials	3	1	3				
								CEM040	E	Applications of Nanobiotechnolngy in Medicine	2	1	2				
								CEM201	E	Instrumental Analysis Special Topics	3	1	3				
								CEM036	E	Introduction to Energy Technology	3	1	3				
								CEM740	E	Special Topics in Advanced Electrochemistry	3	1	3				
							CEM571	E	Biochemical Engineering	3	1	3					
							CEM760	E	R&D and patents pratice	3	1		3				
							BEM113	E	Animal and Insect Cell Culture	3	1		3				
1 At least 40 credit hours are required to receive Master degree. (1)2 credit hours from the required courses.(including Research on Special Topics (1)(2)) (2)32 credit hours from the elective courses. (3)6 credits of thesis.(grant upon graduation)																	
2 Max. of 3 credit hours outside of CME Department and Biomed Graduate Institute are counted for graduation requirement.																	
3 Students have to take at least 1 course from 6 core elective courses.																	
4.1 Seminar (1)(2) (3)(4) should be taken during the master program study.																	
Students who graduate earlier than regular two years may waive Seminar (3)(4) courses, but still need to obtain 40 credit hours to fulfill graduation requirement.																	
5 International students may take elective courses in English provided by other departments/graduate institutes of CGU toward graduation requirement, within the caps of 12 credit hours for M.S. students and 9 credit hours for Ph.D. students. These courses are subject to be reviewed by advisor and graduate student affairs committee. This regulation applies to the international students admitted through the international student admission process.																	
6 All graduate students must pass/meet the English proficiency test/requirement as outlined in "English Proficiency Assessment for Foreign Students, College of Engineering, Chang Gung University".																	
7 E:Elective / C:Compulsory																	