

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 CEM010	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	
									CEM710	E	Instrumentation and Control System Design	3	1	3	
	CEM011 CEM012	E	Seminar(1)(2)	4	1	2	2		CEM350	E	Particulate Engineering	3	1	3	
	CEM013 CEM014	E	Seminar(3)(4)	4	2	2	2		CEM161	E	Enzymes and Cell Immobilization	3	1	3	
									CEM360	E	Applied Industrial Microbiology	3	1	3	
									CEM102	E	Special Lecture in Practice of Chemical Industry	3	1	3	3
									CEM016	E	Theory and Design of Wastewater Treatment	3	1		3
Chemical Field/Core	CEM030	E	Advanced Reaction Engineering	3	1	3			CEM540	E	Bioreactor	3	1		3
	CEM052	E	Advanced Transport Phenomena	3	1	3			CEM053	E	Advanced Process Control	3	1		3
									CEM21Y	E	Design of Experiments	3	1		3
	CEM220	E	Advanced Process Engineering	3	1		3	CEM256	E	Battery and Energy Conversion	3	1		3	
	CEM270	E	Advanced Thermodynamics	3	1		3	CEM381	E	Chemical Process Simulation Practices	3	1		3	
Materials Field/Core	CEM120	E	Advanced Organic Materials	3	1		3	CEM039	E	Industrial Instrumentation and Control	3	1		3	
	CEM123	E	Advanced Inorganic Materials	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	CEM172	E	Ceramic Materials	3	1	3	
		E	English Speaking and Presentation (II)	2	-	2			CEM131	E	Polymer Structure and Physical Properties	3	1	3	
		E	English Technical Writing (1)	1	-	1			CEM153	E	Membrane Technology	3	1	3	
		E	English Technical Writing (2)	1	-	1			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 Nanobiotechnology in Medicine	2	1	2			
								Others Field/Professional	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 practice	3	1		3
									BEM113	E	Animal and Insect Cell Culture	3	1		3

Remarks

- At least 40 credit hours are required to receive Master degree.
  - 2 credit hours from the required courses. (including Research on Special Topics (1)(2))
  - 32 credit hours from the elective courses.
  - 6 credits of thesis. (grant upon graduation)
- Max. of 3 credit hours outside of CME Department and Biomed Graduate Institute are counted for graduation requirement.
- Students have to take at least 1 course from 6 core elective courses.
- 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.
- 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.
- 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".
- E:Elective / C:Compulsory